The OIL WEEKLY

FOR THE DRILLING, PRODUCING, PIPE LINE INDUSTRY

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CASE HISTORY

WEST EDMOND FIELD
Oklahoma

THERE MUST BE A REASON !

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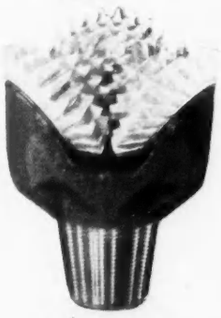
...OF ALL THE ROCK BITS

used in its development were Hughes



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April 8, 1946

VOLUME 121, NUMBER 6

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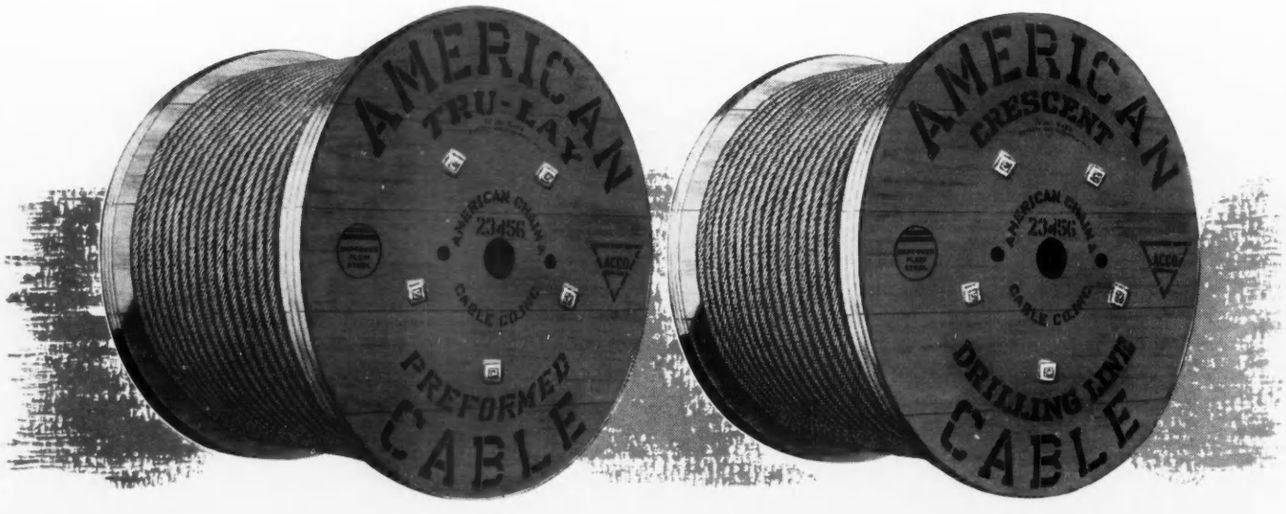

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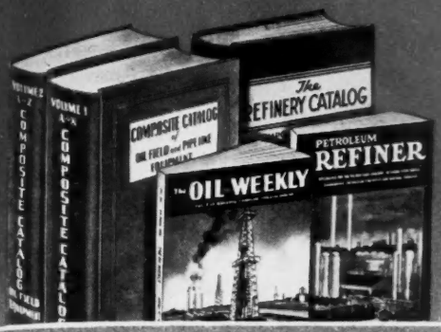

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Looking Ahead
WITH THE EDITOR

ECONOMIC factors normally determine whether or not a well or a field will be produced. The productivity of such producing wells, pumped or flowing, will be discontinued when the cost of production exceeds the income from such production, be it oil or gas. Extensive studies have been made of prospecting, drilling, completion, production and repair of oil and gas wells. But, there is a greater need for extensive study in aging producers before considering abandonment. "Engineering of Oil Well Abandonments," by William E. Schoeneck, The Ohio Oil Company, to appear in the next issue of THE OIL WEEKLY, is a symposium of proposed methods of approach to the study of fields and wells before plugging. Such an extended study may prove that a change in present productive methods, or well reworks, may extend the economical productivity of the well or field.

ABANDONMENTS STUDIED

The author considers the well history as far back as the driller's reports important in such a study, and the compilation of such data to lead the investigator to a logical understanding of the reservoir conditions. Such a program would necessarily require full knowledge of reservoir performance and familiarity of present methods to encourage and increase the productivity of oil wells.

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Maybe You Want to Write Your Senator

THE Case bill (outlined in detail in THE OIL WEEKLY, March 18, page 23) will remain just a bill rather than being enacted into law unless public opinion gets behind it and forces the Senate to reinsert some teeth which, deftly or not, were withdrawn during its overtime session in the Education and Labor Committee room. On the Senate floor the weak version of the bill may be revitalized to some extent if public reaction convinces Senators that such action is in accord with popular demand.

Chairman Senator Murray of Montana and other "friends of labor," including Thomas of Utah, Pepper of Florida, Guffey of Pennsylvania, LaFollette of Wisconsin, Morse of Oregon did what was expected of them and produced a bill that might as well, insofar as remedial possibilities are concerned, have stayed in the committee pigeonhole where it rested for weeks. Their plan was to hold up actual consideration of the bill until after the big strikes.

Too long has Congress specialized in one-sided labor legislation. House members, jerked to this realization by the serious strikes of the past few months, attempted to reform federal labor legislation. Recent strikes vitally affected the national economy and indications are that the situation won't be so rosy on the labor front within the coming six or eight months to justify the committee's apparent feeling that "the country will forget."

If there are valid objections to parts of the Case bill, then they should be pointed out and an effort be made to rewrite those sections. But the nation has every right to expect their servants in Congress to give proper consideration to a labor bill, fair to both sides. Certainly such a bill is long overdue.

"Sentiment in the Senate is growing for a strong bill embodying the principal features of the Case bill," Russell Brown of IPAA reported recently. "If our members are interested in this legislation I am certain that their Senators would like to receive expressions of views. A few votes in the Senate might assure passage of a proper bill to avoid unnecessary strikes."

Place for Compact's Statistical Program

IT IS to be hoped that the Interstate Oil Compact Commission decides at its forthcoming meeting to commence publication of statistical reports on various aspects of production and drilling operations, as proposed.

It is true that some of these statistical reports might duplicate some data now already available to the industry. However, these statistics need to be compiled, correlated and charted, and this is the service that the Compact proposes to give the industry. For example, some of the statistical reports contemplated by the Compact would serve to replace the now discontinued reports of the PAW. The PAW statistical work was valuable and effective, and it seems proper that the Interstate Oil Compact Commission is the organization that should carry on this activity.

Furthermore, the Compact proposes to analyze and coordinate various state records into a national report. This would be a valuable service. It would include some phases not now adequately analyzed or combined into any national record.

In addition, the Compact's proposed program would include some entirely new reports, such as assembling natural gas data in a manner comparable with oil production.

* * *

It appears to be indicated that after a temporary period of readjustment, the overall volume of business related to the petroleum industry will be substantially larger, postwar, than was the case prewar.

—Annual Report, 1945, Dresser Industries, Inc.

Complete Overhaul of Oil Prices Needed

AN INCREASE in crude producing rates, as requested by the United States Navy, probably would cure the shortage of burning and diesel oils. However, under existing conditions such a move would seriously damage the stability of the industry, for it would result in the manufacture of more gasoline than can be used.

The problem of balancing the supply of various petroleum products with their current consumptive rates can be solved in a much more efficient manner. The way to do this would be to overhaul completely the industry's price schedules, which are obsolete after having been frozen for almost five years.

Were it not for artificial price regulation, the Navy would not be short of petroleum fuels today and the industry would not be having such a difficult time in preventing an excessive accumulation of gasoline stocks. For under non-controlled prices, the situation that exists today would have resulted in higher prices on fuel oils. This would have provided the incentive for refiners to adjust their yields, and soon the supply of all the various petroleum products would be brought into line with their respective consumptive demands.

Recent moves of the OPA, in granting higher crude prices and some adjustments in fuel oil prices, are in the right direction—but they have come too late and have been only a part answer to the obsolete price schedule under which the industry is forced to operate. A complete overhauling of the price schedule is what is needed to solve current problems, and this can come only when price regulation is removed.

* * *

Big business that it is, agriculture is still making rapid progress, and, like a shadow, the expanding farm market for petroleum products is matching it stride for stride.

—Lion Oil News, February

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Resistance to rotation increases with depth of hole. Therefore, RPM becomes less Per FOOT of depth, unless your drill pipe is fully "rubbered" with Patterson-Ballagh Drill Pipe and Casing Protectors. To act as bearings to decrease the torque. As an example,

CASE HISTORY NO. 12

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The Week's News

LATEST price developments last week were formal announcement of the 10-cent increase on crude, superimposed on subsidies for stripper-well operators, and disclosure that OPA is studying suspension of all oil price ceilings and may have an announcement early next month. Story below.

Tidelands Resolution—A Senate resolution proposed by Capehart, calls upon the Interior Department to issue a lease on California offshore lands to Robert E. Lee Jordan, whose application in 1937 started the controversy over federal-state ownership, and the filing in the Supreme Court of a response by California to the government's motion to bar the state's original 822-page answer to complaint as "prolix." Page 2.

Oil Lease Value Suit—The Supreme Court also has been asked to rule that the government must take oil and gas interests into consideration in making settlement for Texas lands seized during the war. Page 28.

FPC Disavows Report—The Federal Power Commission again sought to allay the fears of the industry that it was seeking to exercise control over production, with an assurance that it not only has no interest in oil but does not intend to regulate the production or gathering of natural gas. Page 25.

Rubber Situation—The Department of Commerce is weighing the favorable and unfavorable factors of Far Eastern rubber and concludes that the test of the synthetic rubber industry's ability to meet peacetime competition will not come before 1947.

Bureau Estimate for April—With first quarter gasoline demand above expectations and additions to stocks slowing down, the Bureau of Mines forecast that April demand for domestic crude would be 4,620,000 barrels daily, with Texas supplying 2,080,000 barrels or the entire 170,000-barrel increase over March. Page 27.

Joint Guardianship Plan—An American-Soviet-British guardianship for Iran to halt "competitive concession-grabbing" and put the country on its feet was suggested by Dr. A. C. Millspaugh of Brookings Institution, a former administrator-general of Iran's finances. The present government was characterized as the weakest, most disorganized and incompetent Iran has ever had.

Lead Shortage Continues—A return to wartime gasoline qualities may result from the lead shortage, which necessitated an order by CPA limiting the use of lead and ethyl fluid and prohibiting production of gasoline above 80 octane. Two to three years may elapse before the lead situation returns to normal. Page 28.

Big Inch Interest Shown—Although two applications have been filed with the Federal Power Commission for authority to convert the Big Inch pipe lines to gas, War Assets Administration has received no firm bids for the lines, it was disclosed. Page 29.

Gas Industry Champion—The governor of West Virginia, a coal producing state, came forward last week at the FPC hearing as a leader in the natural gas industry's fight to curb federal control of that industry. Page 25.

Building Restrictions—Wording of the CPA restrictive order has caused some industry attorneys to believe that construction of bulk plants and deep water terminals may be held up. Page 27.

Relief for the Navy—Lower rail rates have been granted from West Texas to Gulf refinery points, which means that crude will move by tank car, thus promising relief for the Navy which is short of bunker fuel. Page 26.

Early May Announcement Expected on Suspension of All Oil Price Ceilings

The long-sought suspension of all oil price ceilings apparently is in sight, possibly to be announced early in May.

Should suspension be delayed beyond another month, however, it is expected that crude producers will be given another increase in price ceilings—this time 25 cents per barrel to bring the raise to the 35 cents sought by the industry.

Two sets of figures are currently being compiled by OPA, one to show the necessity for a further increase in crude prices, undertaken in pursuance of Administrator Paul A. Porter's promise to make a spot-check following announcement of last week's 10-cent increase, and the other designed to show the effect of ceiling suspension upon prices of both crude and refined products, for submission to Stabilization Director Chester A. Bowles.

Since a recommendation for suspension of ceilings must be supported by well-based estimates of its effect upon prices, OPA actuaries are attempting to read the future and are understood already to be of the opinion that refined product prices can be increased only slightly without endangering the volume of sales. There is no question as to the adequacy of supply, the other major factor for consideration in dealing with questions of suspension.

It was learned, meanwhile, that a delay is more than likely in getting results of the current inquiry to determine whether a further increase in crude prices is necessary to return the producing branch of the industry to its 1936-39 level of profits. Reports on the study are due about April 15, but OPA is short of men and it is expected they will not come in for some days thereafter. The greatest difficulty lies in getting the figures for small producers. The major companies are making their figures up themselves, but it is necessary to send OPA representatives to many of the small operators who do not have the necessary accounting staff or facilities.

Postings Now Up 10 Cents

Producers of natural gas, who last year were given an increase in their price for sales for carbon black production, also were reported this week to be showing signs of restiveness, and are expected to come in to OPA in the near future with a request for another increase in the event their ceilings are not suspended along with those for oil and products.

Effective April 1, oil producers throughout the United States were receiving 10 cents per barrel more than formerly for their production. Purchasers generally increased all prices for all crudes by that amount, after OPA formally authorized a blanket 10-cent raising of ceilings. Production on which subsidies have been paid will be priced 10 cents higher and continue to command the same subsidies over and above the new posted prices.

Traditional price leaders initiated the actual changes of prices, and other purchasers quickly fell in line. In Texas, New Mexico, and South Louisiana, for example, Humble Oil & Refining Company took the initiative; and in California, Standard Oil Company of California.

Representative new prices include the following: East Texas field $1.35 per barrel, Conroe $1.53, 40 gravity Gulf Coast crude $1.58, Oklahoma-Kansas and North Texas 36 gravity $1.27 and 38 gravity $1.31, West Texas-New Mexico 36 gravity $1.14; Illinois basin $1.47; Elk Basin heavy $1.00, Elk Basin light and other Rocky Mountain crudes 40 gravity and above $1.35.

The average value of crude oil at the wells for the whole United States in 1945 was approximately $1.22 per barrel. This 10-cent blanket increase indicates that now the average value is about $1.32 per barrel.

In 1941, last prewar year for the U. S., the average value was $1.14 per barrel. Today's average price is therefore 18 cents a barrel or about 16 percent above 1941.

The highest average price in modern times was that of $3.07 per barrel in

1920. Since then, the average has been as follows: $1.73 in 1921, $1.61 in 1922, $1.34 in 1923, $1.43 in 1924, $1.68 in 1925, $1.88 in 1926, $1.30 in 1927, $1.17 in 1928, $1.27 in 1929, $1.19 in 1930, 65 cents in 1931, 87 cents in 1932, 67 cents in 1933, $1.00 in 1934, 96 cents in 1935, $1.09 in 1936, $1.18 in 1937, $1.13 in 1938, $1.02 in 1939, $1.02 in 1940, $1.14 in 1941, $1.19 in 1942, $1.20 in 1943, $1.22 in 1944, $1.22 in 1945, and about $1.32 now.

Subsidies to Continue

The price increase, effective last week, and estimated to net producers $150 million a year, will apply to all production, and the order was so worded that continuance was assured of all existing subsidy payments, indicating that RFC, which had been considering the possibility of shaving subsidies to reflect the increase, failed to convince Stabilization Director Chester Bowles that such action was called for.

The OPA order, making effective 30 percent of the increase sought by the industry, was brief, merely amending Section 12-B of RMPR 436 to read as follows:

"Notwithstanding any other provision of this regulation, the maximum price for crude petroleum shall be the maximum price as determined under any section of this regulation, plus 10 cents per barrel."

OPA said the increase was based on the earnings of the independent producers, which were not averaging the 1936-39 rate of return, and pointed out that "this segment, generally comprising independent producers who do not carry on other petroleum operations, such as refining, produces approximately 40 percent of the total crude oil output, although it represents at least 95 percent of total producers."

As previously announced, the increase will not be passed on to consumers at this time, but studies are being made to determine whether it can be fully absorbed by refiners without increases in their ceiling prices. The refining industry, in discussions with OPA officials, has consistently contended that it cannot bear the additional cost under present conditions, pointing out that it was necessary to raise the ceilings on kerosine and heating oils to encourage greater production under the previous crude ceilings. They also argued that in the event OPA made a further increase in crude prices, any possibility of absorption by the refining industry would be eliminated.

Patman Asks Decontrol

Congressman Wright Patman of Texas, chairman of the House Small Business Committee, called on Paul Porter, head of OPA, to lift price controls on crude oil and petroleum products immediately. Patman, in his letter to the OPA Administrator, said that now that supply and demand are in balance in the oil industry there is no reason for further price control and that its continuation would only lead to increasing the depression into which the industry has been forced.

Cities Service Executive Changes Made by Board

H. R. Straight

A. W. Ambrose

The board of directors of Cities Service Oil Company (Delaware) last week elected H. R. Straight as chairman of the board and A. W. Ambrose as president. Similar action was taken by the board of Empire Pipe Line Company. Straight has headed these companies since their organization while Ambrose has been serving as executive vice president of both companies.

Straight was born at Tidioute, Pa., in 1874 and after graduating from Stanford University, he began his career with his father who was a prominent Pennsylvania oil operator. In 1911, he moved to Oklahoma where he was employed by the T. N. Barnsdall interests. The following year Henry L. Doherty acquired the company with which Straight was associated and he was made manager of the oil properties.

Ambrose, who has been with Cities Service for 23 years in various executive positions, was born in Lockeford, Cal., in 1889. He graduated from Stanford University with degrees in geology and mining engineering. After working as a geologist and engineer in California and Texas, Ambrose joined the U. S. Bureau of Mines as petroleum technologist in 1918. After advancement to assistant director of the U. S. Bureau of Mines, he joined Cities Service as manager of land and geological activities in April, 1923. On August 1, 1941, he was elevated to the position of executive vice president and assistant general manager.

NGAA Convention Program Includes Eleven Papers

Outstanding authorities in the natural gasoline and cycling industry are scheduled to deliver reports and papers at the Silver Anniversary Convention of the Natural Gasoline Association of America, April 17, 18, and 19 at the Baker Hotel, Dallas.

The Hanlon Award will be presented for individual meritorious service to the natural gasoline and cycling industries. The "Information Please" session on Friday will provide a forum where leading authorities on processing, production, and operating trends may be questioned.

Natural Gasoline Output For January Shows Decline

Production of natural gasoline and allied products increased by 3 percent in January as compared with the preceding month, averaging 13,389,000 gallons daily, with the greatest percentage increases occuring in California, Louisiana, New Mexico, Oklahoma and Texas, Bureau of Mines has reported.

Production of light products during the month, included 201,419,000 gallons natural gasoline against 200,778,000 gallons in December; 25,196,000 natural gasoline mixture against 24,781,000 gallons; 37,899,000 raw condensate against 32,270,000 gallons; 41,419,000 commercial butane-propane mixture against 39,838,000 gallons; 27,379,000 normal butane against 29,300,000 gallons; 25,990,000 propane against 24,397,000 gallons; 12,362,000 other mixtures against 12,499,000 gallons; 13,793,000 iso-butane against 13,252,000 gallons; 3,271,000 isopentane against 1,578,000 gallons; 22,441,000 finished gasoline and naphtha against 22,012,000 gallons, and 3,887,000 other products against 3,792,000 gallons.

Stocks increased at both refineries and plants and terminals during the month, the former increasing from 69,006,000 to 77,532,000 gallons and the latter from 112,507,000 to 133,893,000 gallons.

Reservoir Engineering To Be Conference Topic

A conference on petroleum engineering practices, the second this spring, will be held April 22-26 by the Petroleum Engineering Department, Texas A. & M. College, College Station, the topic to be "Reservoir Engineering." Park J. Jone swill be in charge with lectures scheduled as follows:

Monday, April 22, 1:30 to 5 p.m.—"Elements of Production, Mechanics and Characteristics of Reservoir Rocks."

Tuesday, April 23, 9 to 12 a.m.—"Composition of Hydrocarbons"; 1:30 to 5 p.m.—"Properties of Reservoir Gases."

Wednesday, April 24, 9 to 12 a.m.—"Properties of Reservoir Liquids"; 1:30 to 5 p.m.—"Separator Samples and Equilibrium Constants."

Thursday, April 25, 9 to 12 a.m.—"Displacement of Oil by Water and Gas"; "Displacemen of Oil and Water by Gravity"; Invasion Factors and Patterns"; 1:30 to 5 p.m.—"Displacement of Condensate by Cycling."

Round table discussion, 7:30 to 9:30 p.m. will be held Monday through Thursday.

Friday, April 26, 9 to 12 a.m.—"Volumetric Balances."

Hotel room reservations should be made direct. Harold Vance, Petroleum Engineering Department, Texas A. & M. College, may be contacted for dormitory space.

Industry's Suggestions Needed by TIIC in Work

Industry's assistance in determining specific information that should be sought by the Office of the Publication Board, Department of Commerce and the War Department in the selection and microfilming in Germany of data that may be of value is being asked by Washington. This combing of German technical documents is the second phase of work begun by the Technical Industrial Intelligence Committees.

West Virginia's Governor Presents Views Opposing Federal Gas Control

The governor of one of the greatest coal producing states of the nation has revealed himself as a leader in the natural gas industry's fight to curb federal control of that industry.

The gas industry's new champion is Governor Clarence Meadows of West Virginia, whose statement to the Federal Power Commission, during its natural gas investigation hearing in Charleston, West Virginia, last week has become a "bible" for the natural gas folks.

A masterpiece in defense of state's rights, his statement emphatically condemned efforts to give coal interests any advantage over natural gas, and supported virtually every principle which the natural gas industry has been advocating during the FPC inquiry.

"Any manipulation tending to favor one (industry) to the disadvantage of the other (coal versus gas) would inevitably destroy the equilibrium, and tend to create confusion in the industrial, social and business pursuits and relationships of our people, and render disorderly the processes of state government," Governor Meadows told the FPC, after calling attention to the fact that his state is a producer of both coal and gas.

"We are aware," he added, "of the possibilities latent in the very nature of federal regulatory power, to favor not only one of these industries within the state at the expense of another, but to favor a part or parts of the same industry in one section of the state against a similar part or parts at another section of the state. This we conceive to be fraught with danger to the democratic principle of equality before the law and an implement by which these great industries may be divided, rendered impotent, and reduced to a state of dependence upon manufacturing industries beyond our borders.

Opposes Nationalization of Industry

"So far as West Virginia, her people and her economy are concerned, we refuse to recognize any ideology which, no matter by what means or in what guise it may be presented, is purported or many tend to involve our natural gas industry in what some people call nationalization, others socialization, of industry."

The coal industry, which undoubtedly assumed that its spokesmen were in the driver's seat when the hearings reached this important coal-producing section of the country, not only were unable to get any satisfaction out of Governor Meadows' presentation, but it was couched in such language that they will find it difficult to take exception to anything he said.

Likewise, although not as strong a statement, was the presentation made by the spokesman for another substantial coal producing states—that of Vincent P. McDevitt, counsel for the Pennsylvania Public Utilities Commission, who explained that he was speaking by authorization of his governor.

"We feel," said the Pennsylvania spokesman, "that this record should contain a specific statement that the commonwealth of Pennsylvania has entirely adequate power and authority to regulate and control all of the various aspects of the gas industry within its borders and that no regulation by the FPC or any other federal agency is necessary to protect the interests of Pennsylvania citizens.

"The State of Pennsylvania is able to make immediate and economic disposal of all gas produced and no gas is wasted. Therefore, no necessity appears for any outside authority to assume jurisdiction for the purpose of preventing wastage of gas. Assumption of jurisdiction by such an authority regulating natural gas matters alone would be uneconomic, since not only natural gas but coal and oil are produced in large quantities and such regulation of the end use of any one of these products will disturb the natural balance of Pennsylvania economy.

"Ohio, too, through the only official spokesman for that state yet to appear at the hearing, decried any attempt of the FPC to saddle the natural gas industry with any additional control. Paul E. Wieland, a member of the Ohio Public Service Commission, asserted that "An unrestricted distribution of the nation's resources should be maintained subject only to the limitations of good business practices." He also opposed control of and use by any federal agency and said that any such extension and enlargement of federal regulation "with which the nation is at present all too top-heavy, would be another step along the road of a planned economy and away from the time proven system of free enterprise which has made this, our nation, the greatest and most powerful among the nations of the world."

Could Pay More

Another highlight of the Charleston session was the admission of J. W. Carnahan, vice president and general factory manager of Hazel-Atlas Glass Company, that his company's plant at Ada, Okla., which is now getting natural gas for 10 cents per thousand cubic feet, could afford to pay as much as 30 cents per thousand cubic feet for the gas and still make a profit on the products it manufactures. This was brought out by questions of FPC Commissioner Harrington Wimberly, who noted that Mr. Carnahan's company had plants at various locations in the country and paid all the way from 10 cents to 45 cents for gas at the various plants. Carnahan's admission came when the commissioner suggested that the disparity in gas rates indicated that, although natural gas is almost indispensable in glass manufacture, the price paid for the fuel was not a matter of major importance to the company.

Industry Fear of Federal Oil Control Has Administration Somewhat Puzzled

Administration officials are somewhat disturbed over the persistent fears of federal regulation of petroleum even at a time when the government is almost ostentatiously keeping its hands off industry and is encouraging it to whip its problems and get into expanded production as rapidly as possible.

For many years directed at Harold L. Ickes' Interior Department, industry apprehension a year ago switched to the Federal Power Commission, only to revert within the past few weeks to Interior where Julius A. Krug, one-time TVA chief power engineer and firm believer in public power, was still considered in the doubtful column despite his promise of a fair deal to industry when he became Secretary.

To the end that industry may have a free hand, it is pointed out, President Truman has refrained from exercising his powers to take over basic strike-bound industries, such as automobiles, steel and now coal, while the Civilian Production Administration, in the face of short supplies of steel and other important commodities, has refused to re-impose allocations on materials which would have been put under control immediately under like conditions during the war.

The latest expression of industry fears of the Administration was voiced by President Alred Jacobsen of Amerada Petroleum Corporation before the O'Mahoney committee last month, when he said there was apprehension that FPC might ask Congress for extension of its authority to include well-head control of gas produced in association with oil which, he pointed out, would in effect be control of oil production.

Last week, Chairman Leland Olds of FPC countered with the assertion that his agency in the past has stated repeatedly and definitely that it has no intention of extending its authority to oil production, and added that it does not even have any idea of regulating the production or gathering of natural gas.

Industry executives, however, are still skeptical, and probably will hold to their ideas until the FPC's report on its natural gas investigation, probably next winter, shows whether they are right or wrong.

Lowered Rail Rates on West Texas Crude May Help Navy Oil Situation

A heavy volume of low-gravity West Texas crude will be moved in trainload lots to refineries in the Houston and Texas City districts to supplement pipeline deliveries as a result of action taken April 3 by the Texas Railroad Commission in reducing the rail tariff on crude shipments from McCamey to these refining centers from 35 cents to 15 cents per 100 pounds. Coastal refineries, which have been seeking up to 10,000 barrels of Permian Basin oil daily each, asked a rate reduction when all available space in pipe lines became absorbed. Officials of the U. S. Navy supported the reduction as a means of supplying plants with oil needed to meet the Navy's deficit in fuel oil stocks.

The lower rate applies to crude originating on the Santa Fe railroad which will make deliveries direct to the plants. Humble Pipe Line Company probably will be the largest rail shipper, and proposes to erect a 100-car capacity rack at McCamey. Shell Pipe Line Corporation is considered a prospective shipper from its McCamey terminal.

An adequate supply of 28-53-gravity sour crude is available at McCamey, as the allowable for this grade of oil has been greatly curtailed through the expansion of production of premium quality sweet crude in the deeper pays.

Captain B. B. Briggs, heading a committee assigned to procure fuel oil supplies for the Navy, recently informed the commission that a government agency would absorb the freight differential if the required crude had to be moved via tank cars to coastal plants. The current trunk pipe line tariff from the Permian Basin to coastal terminals ranges from 18 to 20 cents per barrel, while the gathering charge varies from 5 to 7½ cents per barrel.

New Mexico Asphalt Buys Eddy County Pipe System

New Mexico Asphalt and Refining Company, owner of a refinery at Artesia and Artesia Pipe Line Company, have acquired the New Mexico Pipe Line Company's system that serves the majority of the fields in the Eddy County sector of New Mexico from Continental Oil Company and the Flynn-Welch and Yates interests for approximately $200,000.

This deal involves about 110 miles of 2-, 3- and 4-inch gathering and discharge lines. The system gathers about 2850 barrels daily, and also has been handling 900 barrels daily gathered by the Artesia Pipe Line Company in supplying the purchaser's refinery.

Crockett County Fields To Get Line Connection

Texas-New Mexico Pipe Line Company has authorized construction of lateral lines from its West Texas-Houston 12-inch carrier to connect with the Olson, Clara Couch, Hoover, Simpson, Shannon, Noelke and Live Oak fields, Crockett County. These fields are prorated to about 1800 barrels daily, with numerous wells shut in due to absence of a market outlet.

The oil will be handled for the account of The Texas Company. Installation of the extensive system is dependent upon pipe deliveries.

Contract Is Awarded for Wasson Extension Line

Stanolind Pipe Line Company has awarded contract to Fulton Construction Company, Lubbock, Texas, for the construction of its previously reported extension of its West Texas-Oklahoma 16-inch carrier from the present field terminal at Sundown to the Wasson and nearby fields. The new project will involve 35 miles of 16-inch, and first pipe is due about mid-May. Officials of the company have confirmed reports that this West Texas system eventually will be expanded.

Stanolind's carrier has a capacity of 66,000 barrels daily and is scheduled to handle only 44,500 barrels daily in April, owing to the restricted refinery demand for the salty-sulphur crude now available. The runs will be materially boosted when connection is made with Wasson and nearby areas, which yield a more desirable type of crude.

Lone Star Job Nears End

Lone Star Gas Company will complete construction by mid-April of its 79½ miles of 14-inch natural gas transmission line from the Carthage field, Panola County, Texas, to the Opelika field, where connection will be made with its main system. The carrier's field gathering system, involving 12 miles of 2 and 6-inch pipe, has not been installed due to flood waters in that sector of the field.

The Carthage-Opelika line will have a capacity of 100 million feet daily, operating at 1200 pounds pressure.

Mexican Buys Line

Mexican Gas Company has purchased United Gas Company's 12-inch natural gas line from Roma, Texas, to Monterrey, Mexico, and has made plans to spend approximately $2 million in the construction of a parallel line. Present capacity of the line is 45 million cubic feet daily and additional construction would boost the capacity to about 80 million cubic feet daily. Prisciliano Elizondo is president of Mexican Gas.

House Approves Bill to Require Cartel Recording

Moving to prevent a recurrence of the Farbenindustrie cartel arrangement, the House of Representatives last week passed the Boykin bill that patent agreements be recorded. Thus the government at all times would know what cartel agreements have been entered into by American industry, but the information, in a closed file, will not be open to public inspection.

The bill calls for the recording of every international agreement concerning a patent and, with certain exceptions, every similar domestic agreement which imposes any restrictions not inherent in the patent grant, or which includes any restriction as to price, quantity of production, geographical area or field of use of the invention involved. More specifically, it requires the recording of every license under a patent or patent application, and every agreement with respect to the same, and every agreement providing for the exchange of technical information, any of the parties to which is not a resident of the United States.

The filing of domestic patent agreements is designed to facilitate the detection of violations of the antitrust laws.

Kansas City-Omaha Pipe Line Building to Begin April 1

The Great Lakes Pipe Line Company has announced that construction of an 8-inch gasoline pipe line from Kansas City, Mo., to Omaha, Nebr., will begin the first part of April and will be completed about July 1.

The construction was originally scheduled for last fall but was delayed because of the shortage of materials and labor. The new line will have pumping stations at Atchison, Falls City and Nebraska City.

Texas Crude to Illinois

Globe Oil and Refining Company, owner of a large refinery at Lemont, Illinois, has contracted for the purchase of 5000 barrels of crude daily from The Texas Company's production in the Slaughter field, West Texas. This crude will be moved through Stanolind's line to Drumright, Okla., thence via The Texas Empire Pipe Line Company to the Illinois plant. Globe was a large purchaser of West Texas crude during the war.

Plants Sold and Leased

WAC announced April 5 that it has sold part of the Houston, Texas, refinery operated during the war by Eastern States Petroleum Company to that company for $137,576 for use for the production of aviation-grade gasoline, and has leased to Standard Oil Company of California the Bakersfield, Calif., plant formerly operated by Mohawk Petroleum Corporation for experimental production of chemicals. The terms of the lease were not disclosed.

Bureau's April Demand Estimates Show Increase Over March Figures

April demand for domestic crude oil was forecast last week by the Bureau of Mines at 4,620,000 barrels daily, an increase of 170,000 barrels over its March prediction, with requirements for Texas oil at 2,080,000 barrels daily against 1,910,000 barrels last month.

As a result of a slowing down in the rate of accessions to gasoline stocks due to a heavier-than-anticipated demand during the winter—first quarter demand was 15 percent above estimates made by PAW last fall and March-end inventories of finished and unfinished gasoline were about 104,000,000 barrels, or six to seven million below PAW estimates of storage maximum—bureau officials pointed out there is no longer a limitation on runs, which should tend to ease the fuel oil situation.

From present indications, they said, there is no reason why refiners should not run as much crude as necessary to meet requirements for products other than gasoline, particularly if OPA permits refiners to pass on to their customers the ten-cent increase in crude prices and thus retain the full amount of the increases on fuel oils granted last month. The Navy is ready to take all heavy fuel oil offered for a rather considerable period, to meet operating demands and replenish depleted stocks.

While first-quarter gasoline demand was considerably higher than PAW estimates, it is not expected that margin will be maintained. For the current quarter, demand is seen as possibly 7 to 8 percent higher than PAW figured and in the third quarter may be as much as 4 percent more. Total demand for all oils in the first quarter, was about 10 percent higher than anticipated.

Commenting that demand for the second quarter is expected to continue at the level of the first three months of the year, the bureau reported that total indicated demand for all oils in the first quarter may approximate 5,320,000 barrels daily, with a total motor fuel demand of about 4,590,000 barrels daily, an indicated consumption of 4,520,000 barrels a day and an increase in stocks of about 70,000 barrels daily. Crude runs to stills during the quarter were estimated at 4,590,000 barrels daily, with runs of foreign crude of 230,000 and domestic 4,360,000 barrels a day.

Beside the heavy increase foreseen in demand for Texas oil, the bureau adjusted the rates for 16 other states, 11 upward and 5 downward, leaving unchanged from March only Michigan, 46,000 barrels daily; Pennsylvania, 33,000, and Nebraska, 800. Increases were forecast for Louisiana from 372,000 to 374,000 barrels daily; Oklahoma, 366,000 to 367,000 barrels; New Mexico, 98,000 to 99,000; Arkansas, 76,000 to 78,000; Mississippi, 52,000 to 53,000; Kentucky, 29,000 to 29,500; Montana, 20,400 to 21,000; Indiana, 13,000 to 14,000; New York, 13,000 to 13,200; West Virginia, 8200 to 8400; Ohio, 7000 to 7300; and others 600 to 800 barrels.

Reductions were foreseen in California from 838,000 to 834,000 barrels; Kansas, 252,000 to 250,000; Illinois, 198,000 to 197,000; Wyoming, 94,000 to 92,000, and Colorado 23,000 to 22,000 barrels.

Crude Oil Production in the United States

(Estimates compiled by the OIL WEEKLY
All figures indicate daily averages in barrels.)

STATE OR DISTRICT	PRODUCTION IN WEEK ENDED April 6	March 30
Alabama	1,000	1,000
Arkansas	77,100	77,200
California	853,400	861,300
Colorado	24,500	24,850
Florida	100	100
Illinois	209,500	208,600
Indiana	18,150	17,850
Kansas	236,000	259,400
Kentucky	32,000	31,700
Louisiana	370,300	375,850
North Louisiana	83,500	82,500
South Louisiana	286,800	293,350
Michigan	45,750	44,200
Mississippi	55,850	55,250
Missouri	100	100
Montana	20,050	19,950
Nebraska	750	750
New Mexico	96,550	96,750
New York	14,150	13,200
Ohio	6,750	6,950
Oklahoma	368,500	367,500
Pennsylvania	36,850	36,150
Tennessee	35	35
Texas	1,864,400	1,817,450
Upper Gulf Coast	430,000	418,850
East Texas Field	327,200	317,350
Rest of Eastern Texas	130,500	127,500
Southwest Texas	295,650	290,250
West Texas	450,050	436,500
North Texas	149,000	146,000
Panhandle	82,000	81,000
West Virginia	8,100	7,800
Wyoming	108,500	109,500
Total United States	4,448,385	4,433,435

Tideland Lease Called for In New Senate Resolution

A congressional directive to the Secretary of the Interior forthwith to issue to Robert E. Lee Jordan a preferential lease to offshore oil lands in California for which he made application in March, 1937, was sought last week by Senator Homer E. Capehart of Indiana through a joint resolution introduced in the Senate.

Capehart pointed out that the Senate, in 1937, passed a joint resolution asserting federal title to the submerged lands and directing the Attorney General to file actions to remove any trespassers, cloud or claims contrary.

The Jordan application is one of a number filed with the Interior Department during the past decade, which led to the filing of the action now pending in the Supreme Court.

Tells Court Tidelands Answer Long but Relevant

Admitting that the 882-page document filed with the Supreme Court January 28 in answer to the government's petition for determination of the ownership of the submerged lands was lengthy, State Attorney General Robert W. Kenny told the court last week that it nevertheless should be considered and the Department of Justice motion that it be barred on the ground that it is "prolix" should be denied.

Kenny asserted that government counsel "should, at the very least, be required to take the trouble to read the state's answer and to specify what part of it they deem objectionable and the particular grounds of objection." The answer, he said, is long "simply because the amount of relevant material is very great."

Kenny's brief noted the government's contention that only lands underlying the three-mile coastal belt are at issue in the case, and declared that contention "is true only in the sense that the land selected for litigation in the present case lies within the belt.

"No basis in law or reason has been advanced for a distinction as to ownership between lands underlying the three-mile belt and those which underlie 'inland' navigable waters," he asserted.

"It appears that the government would like to debar California even from submitting its evidence," he said.

Building Rule Likely To Affect Oil Plants

Bulk plant and deep water terminal construction plans of many oil companies must be delayed as a result of the new building limitation order, in the opinion of several industry attorneys. Previously it was believed that the construction curb would hit only service station building, but it is now feared the order will prove more extensive than that. Oil burners are another industry item which is believed to fall under the present Civilian Production Administration ban.

The confusion over the order attaches to the word "structures" in section B, Paragraph 2, which reads: "The term structure does not include anything that is not attached to the land or to a structure as defined above, or any kind of equipment installed outside of and not attached to a building or other structure.

This wording is unclear, as one company official pointed out, because under the first phrase of the definition underground tanks, for instance, would be included in the order because they are attached to the ground. But in the second part of the definition they would not be so included because they are installed outside and not attached to a structure.

The $15,000 limitation may cause many companies to build "shells" of their planned terminals and complete them after the construction limitations are removed.

Scarcity of Lead Affects Gasoline Output; Little Early Relief Is Seen

Ethyl manufacturers will be limited this month to the use of 27 percent of the lead consumed during the three months of November, December and January, and a similar limitation has been imposed by the Civilian Production Administration upon the amount of ethyl fluid which may be used and delivered together with a prohibition upon the production of motor gasoline above 80 octane.

The orders also ban the use of aviation ethyl fluid in the production of motor gasoline and requires CPA approval for the production of 100-octane aviation gasoline.

The ethyl industry has been given the same alocation for the current quarter as it received for the first quarter, 10,000 tons, but in the last quarter it received an additional 3000 tons on appeal whereas this quarter, with only 5000 tons in the appeal stock pile, it is given only 500 tons additional.

CPA officials explained that the allocation has been placed on a monthly basis because of the uncertainty of the lead situation, but predicted that it "may be in two or three years" before conditions return to normal.

They pointed out that lead supplies have been affected by strikes, both in this country and in Mexico, while other factors in the situation are the efforts of England, which during the war used only about one third of her normal consumption, to increase her lead supplies, and the wrecking, by Germans and Japanese, respectively, of mines in Yugoslavia and Burma which, if operated to capacity, could probably meet all lead demands outside the United States.

Officials said that if Yugoslavia and Burma mines are restored to production, permitting the United States to obtain the full output of Mexico and Peru, and necessary development work is done on the mines in this country, the situation will improve rapidly.

As in the case of oil, however, OPA ceiling prices, bolstered by premium payments under which the mining industry feels insecure, are hampering long-time programs for expansion of production. A below-cost ceiling now is offset by premium payments, but there is no assurance how long the government's subsidy plan will be continued.

Time Basis Saves Money For Driller and Company

Accurate time basis for making contracts will save both the drilling contractor and the company money, Leland Breckenridge, secretary of the American Association of Oil Well Drilling Contractors told the Houston Chapter of the National Association of Cost Accountants last week. The speaker long has been engaged in various phases of petroleum accounting.

"Purpose of the accounting program conducted by the association is to assist drilling contracting firms in applying to their work the principles of true cost accounting," he said. "The practices recommended for uniform use are simple of application, are adaptable to the use of any size of operation, and may be used by any bookkeeper or accountant of average training and experience.

"Since time—actual rig operating time—is the essence of contract drilling work, time should be the proper basis of accounting for it. A contractor, to compete intelligently, cannot wait 30 or 60 days after completion to find out what a job is going to cost him. He must have that information, within narrow limits, before taking the work.

"By proper and consistent arrangement of the items of well cost, valuable daily average cost factors may be developed from past experience, to be used in estimating the cost of future work. Armed with a dependable figure representing the cost of operating a given rig for an average day, the contractor may concentrate on the time required for completion, and eliminate much of the guesswork in bidding."

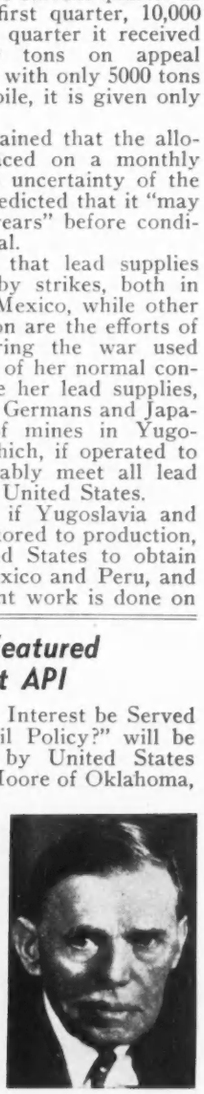
Equipment use time in actual rig operating days, is also considered the proper method of charging job costs with the important indirect expenses of depreciation and overhead, which must be recovered before profit is realized, the speaker declared.

"Workable formula for developing accurate cost factors covering the use of tools on company time is also a necessity to the drilling contractor, and a present weak spot in accounting practice," Breckenridge continued. "Experience averages are particularly important here.

"Proper cost information is a protection to the drilling contractor and to those who contract for his services. He is protected from taking work too cheaply to maintain good equipment and good men, and his employer gets better service and protection from excessive charges. It is good business all around."

Senator Moore Featured Speaker at Coast API

"Would the Public Interest be Served by a Nationalized Oil Policy?" will be the topic discussed by United States Senator Edward H. Moore of Oklahoma, who will be the featured speaker at the annual banquet during the spring conference of the Pacific Coast District of the American Petroleum Institute's Division of Production, in the Biltmore Hotel, Los Angeles, April 11-12, Malcolm W. Morris, program chairman, has announced.



Senator E. H. Moore

Speakers on technical and engineering subjects during the two-day session will discuss the outlook for California oil, drilling costs in that state, as well as drilling and production problems such as reservoir performance, core analysis, electrical dynamic braking, drilling fluids, casing practice, and problems of secondary recovery—including gas and water injection.

Award Sought for Oil-Gas Rights on Condemned Tract

A Supreme Court decision that compensation to owners for land condemned by the government for a term of years should not be limited to the annual rental value of the surface only but should also comprehend the depreciation in market value of the land and the oil and gas rights therein has been asked by General Crude Oil Company and other interests in an 11,000-acre tract in Smith County, Texas, taken by the government in 1943.

The owners of the land also asked the court to find that the damages sustained as owner of the oil and gas lease thereon should be ascertained and awarded fully and finally in one proceeding and not in deferred installments pursuant to a series of separate hearings and orders based on each year's occupancy by the government.

The case was fordwarded to Washington on an appeal from the Fifth Circuit Court of Appeals, which had sustained a trial court decision limiting the recovery of the land owners to the rental value of the use of the surface only.

The petitioners asserted that according to the well settled rule of property in Texas, oil and gas in place constitute a part of the land itself and possesses all of the legal aspects of real property, and contended that the exclusive use of the property by the government deprived them of their right to enjoy the benefits and privileges of the one-eighth interest reserved in the underlying oil and gas, although the government is paying the normal "delay rental" of one dollar per acre annually.

Answering the claims expected to be raised by the government, that the land owners will be able to develop their properties at the termination of the government's occupancy and that damages sought in depreciated oil and gas value are too uncertain to be the subject of an award in a condemnation proceeding, counsel told the court:

"If there should be any uncertainty regarding the amount of compensation to which the fee owners are entitled, let it be remembered that it is the government which instigated the condemnation and determined the nature thereof, the extent of the estate or interest taken, and the length of the tenure. Consequently . . . any uncertainty as to the amount of compensation should not operate to the disadvantages of the petitioners. Mere difficulty in arriving at the exact amount of damages recoverable constitutes no legal obstacle."

Byron Jackson Acquires Patterson-Ballagh Stock

Acquisition by Byron Jackson Company of all of the outstanding stock of the Patterson-Ballagh Corporation was announced last week by E. S. Dulin, president of Byron Jackson Company, and J. C. Ballagh, president of Patterson-Ballagh.

Patterson-Ballagh will operate as a separate division of Byron Jackson Company. The latter firm has owned a minority interest in Patterson-Ballagh since its formation.

Both companies are well known throughout the oil industry and their products are used in every operating oil field of the world, Patterson-Ballagh being mainly concerned with the fabrication of important rubber specialties along with certain other products noncompetitive with those of Byron Jackson Company.

The merger of the companies will supplement the efforts of each and is coupled with the expansion programs planned for domestic and foreign operations of both the oil tool and pump divisions of Byron Jackson, officials declared.

Patterson-Ballagh, one of the pioneers in the oil tool industry, was founded in 1927, introducing rubber casing and drill pipe protectors. Since then many additions to the line of products have been made and are being contemplated, including the wire line guide, pipe wiper, swivel and traveling block bumpers, and the mud gun. In development are many items for producing wells, including a deep well swab, sucker rod wipers, and wire line wipers.

No immediate changes in management, personnel, or sales distribution, are being contemplated. The manufacture, sales, and distribution of Patterson-Ballagh items will remain under the Patterson-Ballagh name. J. C. Ballagh will continue as president and general manager of the firm. D. G. Miller continues as secretary.

Louisiana Hearing

Louisiana daily oil allowables for May and June will be determined from data obtained at a public hearing by the State Conservation Department April 18 in New Orleans.

"Firm Offers" Lacking for Big Inch As a Second Company Outlines Plans

A second application for authority to convert the Big Inch pipe line to natural gas movement was filed with the Federal Power Commission last week by Big Inch Gas, Inc., a new organization in which The Sun Oil Company, Charles Smith Engineering Company of New York, and reportedly a prominent New York investment house are prominent members.

The application stated that an offer of $40 million had been made to War Assets Corporation for the line, in conjunction with a proposal also to purchase the Little Big Inch for the transportation of petroleum products. Big Inch Gas stated that it would convert the Big Inch to gas at a cost of some $30 million giving it a capacity of about 275 million cubic feet daily with a market for 90 percent already developed with unnamed utility companies in New York and New Jersey, and disclosed that it has commitments for the purchase of 300 million cubic feet daily from fields in the Carthage and other gas-producing regions of Texas.

The Big Inch Gas application was filed two weeks after an application by Trans-Continental Gas Pipe Line Company, Inc., a Rogers Lacey firm. It plans to convert both lines to gas or, failing purchase from WAC for $40 million proposes to construct a 26-inch line from Corpus Christi, Texas, to Linden, New Jersey. Although both organizations told the FPC they had made offers to WAC, officials of the later agency last week declared they have received nothing in the way of actual bids on the line from any source, although they said they have had many discussions with people who appear to be interested in them and a number of letters discussing the possibility of acquiring the lines.

The applications to the FPC raised speculation in Washington as to whether offers to WAC for the lines for gas transmission might not be contingent upon the procurement of an FPC certificate. Otherwise, it was said, a successful bidder for the lines might find that some other concerns had been given a certificate and he had a "dead horse" on his hands.

In disposing of the lines, WAC must follow the program laid down by the Surplus Property Administration in its report to Congress recommending that the lines be sold for operation as oil carriers, if possible, and, if they could not be so sold, be operated by the government as common carriers of oil, with conversion to gas only as a last resort. It does not appear, however, that any negotiations for acquisition of the lines for oil have been undertaken other than such conversations as may have been held with Big Inch Gas regarding the smaller of the two lines.

Officials explained that while the writers of letters regarding possibilities of acquisition of the lines may believe their letters constitute firm offers, they cannot be so considered by WAC and that specific bids must be submitted before it can be said the agency has anything definite before it.

Economics Committee of Compact Enlarged to Nine

First meeting of the enlarged Economics Advisory Committee of the Interstate Compact Commssion will be held during the Compact meeting in Tulsa, April 11-13.

This committee, originally comprising only three men, has been increased to nine as follows: R. J. Gonzalez, chairman, Humble Oil & Refining Company, Houston; J. H. Salmon, Shell Oil Company, New York; John Boatwright, Standard Oil Company (Indiana), Chicago; James V. Brown, Independent Petroleum Association of America, Washington, D. C.; A. J. McIntosh, Socony-Vacuum Oil Company, New York; H. J. Struth, Texas Mid-Continent Oil & Gas Association, Dallas; Sidney A. Swensrud, Standard Oil Company (Ohio), Cleveland; Fred Van Covern, American Petroleum Institute, New York; and Clarel B. Mapes, Mid-Continent Oil & Gas Association, Tulsa.

Four councillors to the committee were named as follows: Alexander Sachs, New York; Joseph E. Pogue, The Chase National Bank, New York; E. DeGolyer, DeGolyer and MacNaughton, Dallas; and Stewart P. Coleman, Standard Oil Company (New Jersey), New York. Pogue, Sachs and DeGolyer were the three members of the original economics committee.

Ohio Fuel Asks Permit

FPC has announced that Ohio Fuel Gas Company has applied for authority to construct 80,000 feet of 12¾-inch transmission line connecting two existing lines and 5600 feet of 4-inch line from its main line to a measuring station. The project will cost $266,030 and is needed to provide adequate service for existing customers.

Coal Strike and Its Troubles

Oil industry steel goods supplies this week were facing sharp curtailment as a result of the coal strike, with steel companies still unable to see any indication how long the strike will last and, accordingly, how much the consequent loss in steel production will be.

When the miners walked out the industry was on the verge of achieving its greatest peacetime production, necessitated by a backlog of orders rapidly approaching record levels. Some companies immediately began to curtail steel-making operations to conserve what fuel they had, while others hoped to hang on for at least two weeks. In the aggregate, however, steel production will probably drop sharply by the end of this week if there are no signs of a coal agreement.

Steel industry representatives said that if the strike continues for four weeks or more with no signs of an agreement, the operating rate will be cut to below 50 percent of capacity, while orders will continue to pile up and pose a new problem, since customers anticipating that orders will be cut percentagewise in order to spread supplies as broadly as possible will be likely to ask for considerably more than they will require immediately.

AAPG, SEG, SEPM Meet

Improved Exploratory Methods Stressed at Joint Convention

By WARREN L. BAKER, Editor
and GORDON B. NICHOLSON, Staff Writer

THE need for accelerated improvement of petroleum exploratory methods, and the desirability of inaugurating greater cooperative research to accomplish this purpose, were emphasized at the joint annual meetings of the American Association of Petroleum Geologists, the Society of Exploration Geophysicists and the Society of economic Paleontologists and Mineralogists, which were held in Chicago last week.

As usual, much of the program was devoted to special subjects, including geology in military efforts, oceanography, tectonics, trends and developments in affiliated engineering, regional and field geology, sedimentation, paleontology of the Permian formation, and geophysical case histories.

Research was keynoted by practically all the general speakers, and the work of the research committee also constituted an important activity of the convention. Speakers even urged that scientists broaden their interests into the social problems of the world, as well as urging expanded research in scientific fields. The AAPG Research Committee held several group conferences, with the result that it recommended a number of specific research projects to the association's executive committee for its approval. A number of additional subjects were commended to the research group, and they will receive further consideration before being acted upon.

Project Studies Listed

Recommended to the executive committee by the research committee were project studies on the following subjects: clay minerals; hydrocarbons; formation waters; interior salt dome structural mapping; Gulf of Mexico sediments; origin of porosity and permeability of carbonate rocks; sediments of a single limited stratigraphic section over a considerable area; and cementation of sedimentary rocks and its bearing on oil occurrence.

To facilitate the work of the research committee it was decided to create three divisions, each to be headed by a vice chairman. One division of the committee is to act as a liaison group with local chapters of the AAPG, from which suggestions and ideas for additional research work are to be procured. Another division is to be charged with the responsibility of formulating the suggested problems into a workable program. The other division is to be the ways and means group.

Factual Answers Sought

A scientific approach to the study of social problems was urged by Eugene Holman, president of Standard Oil Company (New Jersey), as a means of getting "answers of fact rather than emotion" to major world questions. The scientist of tomorrow, he said, "must not only create things—he must help to find solutions to problems of their use. And he must do his part to assure that the society in which he works will not unwittingly impose barriers to his further progress."

If the application of scientific techniques of thorough organization and open-minded research for truth should provide only slight progress in the solution of social problems, Holman asserted that "physical science will have given to civilization a gift outweighing any single technical achievement ever made."

In calling upon physical scientists to broaden their vision and contribute to the solution of complex social problems, Holman cautioned that scientists must retain the basic attributes of fact finding and objective thinking. "If in discussing social problems, the scientist takes up cudgels as a partisan," he said, "he is no longer a scientist but just another pressure agent."

Noting that the scientists of the oil industry have done an outstanding iob in supplying petroleum needs, Holman termed competitive spirit and free play of initiative largely responsible for the United States realizing much more of its petroleum potential resources than any other country. The only real cause for concern in respect to adequate future petroleum supplies, he added, "lies in the possibility that restrictive measures of one sort or another may hamper our effort. These restrictions may be nationalistic in character, may be hangovers of war-born controls or may have other forms. But whatever their origin they will not be conducive to the free, unfettered thinking and play of initiative that has been the lifeblood of our industry."

AAPG Officers

Earl Noble, manager of exploration for Union Oil Company, Los Angeles, was elected president of the American Association of Petroleum Geologists during the annual meeting in Chicago last week. Noble, a graduate of Yale University and a post-graduate of the University of California, has worked in Louisiana, Texas, Mexico and California oil areas. He joined Union Oil Company in 1923, was made chief geologist in 1937, and now is manager of exploration for the company. Noble succeeds Monroe G. Cheney, president of Anzac Oil Company, Coleman, Texas.

D. Perry Olcott, Humble Oil & Refining Company, Houston, succeeded M. Gordon Gulley, Gulf Oil Corporation, Pittsburgh, as vice president of the association.

Edward A. Koester, with Darby and Bothwell, Inc., Wichita, Kansas, was reelected secretary-treasurer. Gayle Scott, Texas Christian University, Fort Worth, Texas, was reelected editor of the association's monthly *Bulletin*.

President's Address

The need for greater recognition of the fundamental character and general usefulness of geology also was emphasized by Monroe G. Cheney, retiring president of the American Association of Petroleum Geologists. The struggle for self-support and the pursuit of knowledge and happiness, he stated, lead most naturally toward investigation of the resources, life and history of this planet. "Many of our important problems," he concluded, "can be solved by the geological attack. Geology is a fundamental science which has great usefulness. More use should be made of geology."

Turning to the application of geology to the petroleum industry, Cheney asserted that there should be: (1) an acceleration in the assemblage of geological data; (2) more critical use of geological data; (3) more fundamental research; and (4) more application of geology to the problems of development and recovery of petroleum.

With respect to the need for an acceleration in the assemblage of geological data, Cheney said "correct regional correlations, suitable classifications of the rock sequences, isopachous and paleogeological maps, facies and fossil changes, vertical and lateral extent of oil and gas bearing zones, character of reservoir rocks and their fluids, progressive structural changes and present strike and rate of dip for each 'layer of geology' are essential phases to which much study should be given."

Declaring that a greater discrimination is needed in selecting the wildcat block and drilling site, Cheney urged more complete and accurate data and the maximum use of all information.

Stating that no industry can be greater than its fundamental research program, he said it was fitting that the association should give primacy to its research program. He stressed further work on the difficult problems of origin, migration and accumulation of oil, saying that "new concepts and new methods for discovery and recovery are certain to follow when a more complete knowledge of these fundamentals is at hand."

Cheney also advocated greater geologic investigation be devoted to the problems of development and production.

Case Histories Needed

An urgent request for prompt cooperation in the contribution of geophysical case histories so that the first volume of such a publication might be completed was made by Henry C. Cortes, retiring president of the Society of Exploration Geophysicists.

Cortes stressed the need for publication of geophysical case histories, declaring sufficient drilling now has been done to warrant a book that would be analagous to the volume of the Ameri-

can Association of Petroleum Geologists published under the title of "Structure of Typical American Oil Fields."

The executive committee of the society has authorized the publication of such a book, but Cortes reported that the 26 case histories contributed to date constituted but about half the material required. He urged others to contribute other data promptly, saying there surely is more than adequate material which can and should be made available.

"The contents will be of great value," he continued, "to management, geologists, geophysicists, others in the oil business, and to universities."

Full cooperation between geophysicists and geologist in the duty of finding new oil reserves was declared by Cortes to be "more essential now than ever before, because interpretation of the pinchout and lens type of stratigraphic traps; closures associated with faults; and overthrusts. Now maximum ingenuity must be used to discover new arts; and to improve present methods suitable for such exploration."

Modern Paleontology

Expanding recognition of outstanding achievements of paleontologists in research and in the field was cited by John R. Sandidge, retiring president of the Society of Economic Paleontologists and Mineralogists, as being responsible for a departure from the original limited employment of economic paleontologists as microscopists engaged in the routine examination of well samples. This condition is being improved under recent practices, and the work of paleontologists is assuming a wider scope, with improved facilities provided for performance of their broadened duties.

Earlier primitive methods adopted by the paleontologist while "sitting" on a well are now being replaced by modern methods, according to Sandidge, and a growing practice includes the provision of a portable laboratory for use in the field, containing apparatus necessary for efficient analysis of cuttings and for comfort.

These modifications result from a recognition of capabilities possessed by members of the paleontological group which qualify them for successful activities in the closely related fields of applied stratigraphy and sub-surface geology, including exploration and research. Their qualifications, Sandidge said, are based on broad fundamental training and intimate experience with sedimentary rocks. Notable latent ability present in the rank and file of paleontologists is evidenced by the occasional appearance of brilliant and comprehensive papers by members of this group, and by the significant promotions to outstanding positions by those persons whose accomplishments have risen to a high level. Sandidge predicted greater personal effort toward development of the expanding opportunities and realization of their wider responsibilities promises an interesting future for paleontologists.

Electric Logging Aids

Furnishing impetus to the increasing stature of paleontology is the rapid spread of electrical well logging which has provided the petroleum geologists a tool particularly suited for subsurface interpretations. In addition, the recently added method of well logging by radio activity has practical applications by showing the presence of fluids in the rocks. These developments will not replace the routine examination of well cuttings, he said, but on the other hand, are supplementary and each contributes information not supplied by the other. Paleontology is also a component part of stratigraphy in establishing the sequence of strata in wells.

In the field of research, Sandidge declared paleontologists are qualified to make contributions to a constantly increasing realm of topics. For example, the current report of the American Association of Petroleum Geologists Research Committee lists 16 subjects from a total of 32 which fall within the sphere of economic paleontology, among the foremost of these being oceanographic investigations.

Science's Big Swath

Scientists also were urged to expand their interests into social problems by Carey Croneis, president, Beloit College, who said this was necessary due to the interest that politicians are taking in science. The rapid advancement in science in recent years, as examplified by nuclear physics, he explained, had caused the politician to realize that science now cuts a "big swath in the field of national design."

As a result, many bills involving science legislation were brought before the Senate in 1945, and Croneis urged that geological associations begin to take greater interest in these matters since they are of such importance to the future of science. He also favored the passage of some of these bills.

"I realize that this association," he continued, "cannot lightly abandon its long standing tenets and become engaged directly in issues which, however, scientific, are also partly political. But it would be gratifying if there could be devised a method for the association going on record as favoring not only Senate Bill 1717 but also of the Kilgore-Magnuson Bill, S. 1850.

"Legislation of international import confronts the world in the agenda of the United Nations," he added. "Legislative measures, in the form of the National Science Foundation proposals, which are of national significance for American citizens and scientists, are before the Congress. Unification procedures not only of geological utility but also of general scientific value are awaiting action by this great professional association. I dare to hope that in the very near future all such proposals will be acted on, and favorably."

SEPM Officers

Announcement of the election of F. W. Rolshausen, chief paleontologist for Humble Oil & Refining Company, Houston, as president of the Society of Economic Paleontologists and Mineralogists was made during the annual meeting of the organization in Chicago last week. The election was by mail ballot. The retiring president is John R. Sandidge of Magnolia Petroleum Company.

F. W. Rolshausen

Other newly-elected officers include Cecil Lalicker, professor in the geological department of University of Oklahoma, as vice president, and H. B. Stenzel was re-elected secretary-treasurer. Stenzel is associated with the Bureau of Economic Geology of University of Texas.

J. Marvin Weller, professor in the geological department of University of Chicago, was re-elected editor of the *Journal of Paleontology,* and Dr. W. H. Twenhofel, professor emeritus of the geological department of University of Wisconsin, was re-elected Editor of the *Journal of Sedimentary Petrology.*

SEG Officers

The Society of Exploration Geophysicists elected J. J. Jakosky as its president. Jakosky, who served during the past year as vice president of the society, is with University of Southern California, Los Angeles. He succeeds Henry C. Cortes, Magnolia Petroleum Company, Dallas.

Cecil H. Green, Geophysical Service, Inc., Dallas, who was the society's secretary-treasurer during the past year, was elected vice president.

George E. Wagoner, The Carter Oil Company, Tulsa, was elected secretary-treasurer.

Nomads Entertain Industry Men from Foreign Countries

Among the guests from foreign fields who attended the last meeting of the Los Angeles Chapter Nomads were:

Herman J. Bowman, Arabian American Oil Company; J. W. Clampitt, Iraq Petroleum Company; J. R. Coleman, Arctic Contractors, Fairbanks, Alaska; Ralph A. Davis, International Ecuadorean Petroleum Company; E. M. Donovan, B. O. C., Ltd.; A. F. Driskill, Iraq Petroleum Company; Don W. Joplin, Arctic Contractors; J. W. Killingsworth, Iraq Petroleum Company; Jaime Merino, Petroleos Mexicanos, Juan P. Pedretti, Union Oil Company, Paraguay; Jack Stovall, Arabian American Oil Company; and C. M. Williams, unattached.

Among such guests at last Monday's meeting of the Houston Chapter, Nomads were: R. M. Fernandez, E. W. Garrett and Louis Paredes, Petroleos Mexicanos; R. L. Kuss, Mene Grande Oil Company, Maracaibo, Venezuela; and J. J. Harvey, Creole Petroleum Corporation, Caracas, Venezuela.

Huner Resigns from Louisiana State Post

Dr. John H. Huner, Louisiana State Geologist, has resigned effective April 15, the State Conservation Department has announced, to establish a consultant service in Baton Rouge. Huner, who has been with the state since 1936, received his Ph.D. degree from Louisiana State University in 1939, and was appointed State Geologist in 1940. His earlier degrees were from the University of Illinois and Northwestern.

Graphical Mechanics Multiple Well

By J. I. LAUDERMILK

Head, Department of Petroleum Engineering, New Mexico School of Mines

CONSERVATION of strategic materials for war need has been stressed greatly during the past war years. However, although the fighting on the battlefields has now ceased, new products are as difficult to obtain as in the immediate past. Present industrial strife and turmoil and probable future economic conditions during the period of world readjustment and rehabilitation following the conclusion of the war make it imperative that all existing oil field equipment be utilized and maintained to the maximum degree possible in order to secure a long and satisfactory period of service.

It must be realized that even after the solution of present industrial troubles there will be an inevitable "time lag" in securing additional equipment in sufficient quantities to fill the existing back-log and meet current needs. Appreciable difficulties may reasonably be expected in securing needed replacement or major repair of existing equipment for some time in the future. Therefore, dominating economic forces generated by internal and international conditions, and the future implications of these conditions, must prompt each operator to endeavor to secure maximum operating life and optimum performance with present equipment.

At the present time thousands of oil wells in the United States are being produced by means of various multiple well pumping assemblies. Methods of prolonging the life and improving the performance of this equipment is of great importance to the economic welfare of the individual operators. Increased use of this means of producing petroleum under conditions appropriate for such assemblies offers an opportunity to salvage valuable surface equipment now on hand and install it on other wells which may not be suitable for producing by this means.

One of the most important factors in securing a long and satisfactory productive life of a multiple well pumping assembly is the proper counterbalancing of the system. Proper counterbalancing will eliminate excessive peak loads and possible reversals of stresses and will result in much longer operational life with lower maintenance costs due to reduced wear and fatigue of the materials.

Field Conditions

The physical conditions existing in the field are the determining factors in each individual case under consideration and must be treated accordingly. These condidtions include locations of the wells of the system, types of producing equipment in use (or proposed), pumping cycle, etc. That such factors may vary greatly under different situations is readily apparent. However, for any given problem the physical factors of field conditions are fixed and will remain constant.

For concreteness let the following conditions be assumed to exist in the problem to be considered:

a. Well 1 is being produced by means of a typical individual well pumping unit.

b. It is desired to salvage present production equipment on Well 2 and Well 3, which are adjoining locations, for use in other fields and to produce these two wells by back-cranking from Well 1. The proposed installation is as shown in Figure 1. Commercial equipment will be used throughout the multiple well pumping assembly.

c. Well 2 and 3 will be pumped opposite each other—i.e., one on the downstroke while the other is on the upstroke of the polished rod.

d. Production can be obtained satisfactorily using a pumping cycle of 18-54-inch stroke per minute for Well 1, and a 42-inch stroke at the *gear* for Wells 2 and 3 (approximately 52-inch stroke at the polished rods of these wells).

e. The normal dynamometer card of each well under the proposed operating cycle has been obtained by weighing the individual wells at the respective polished rods.

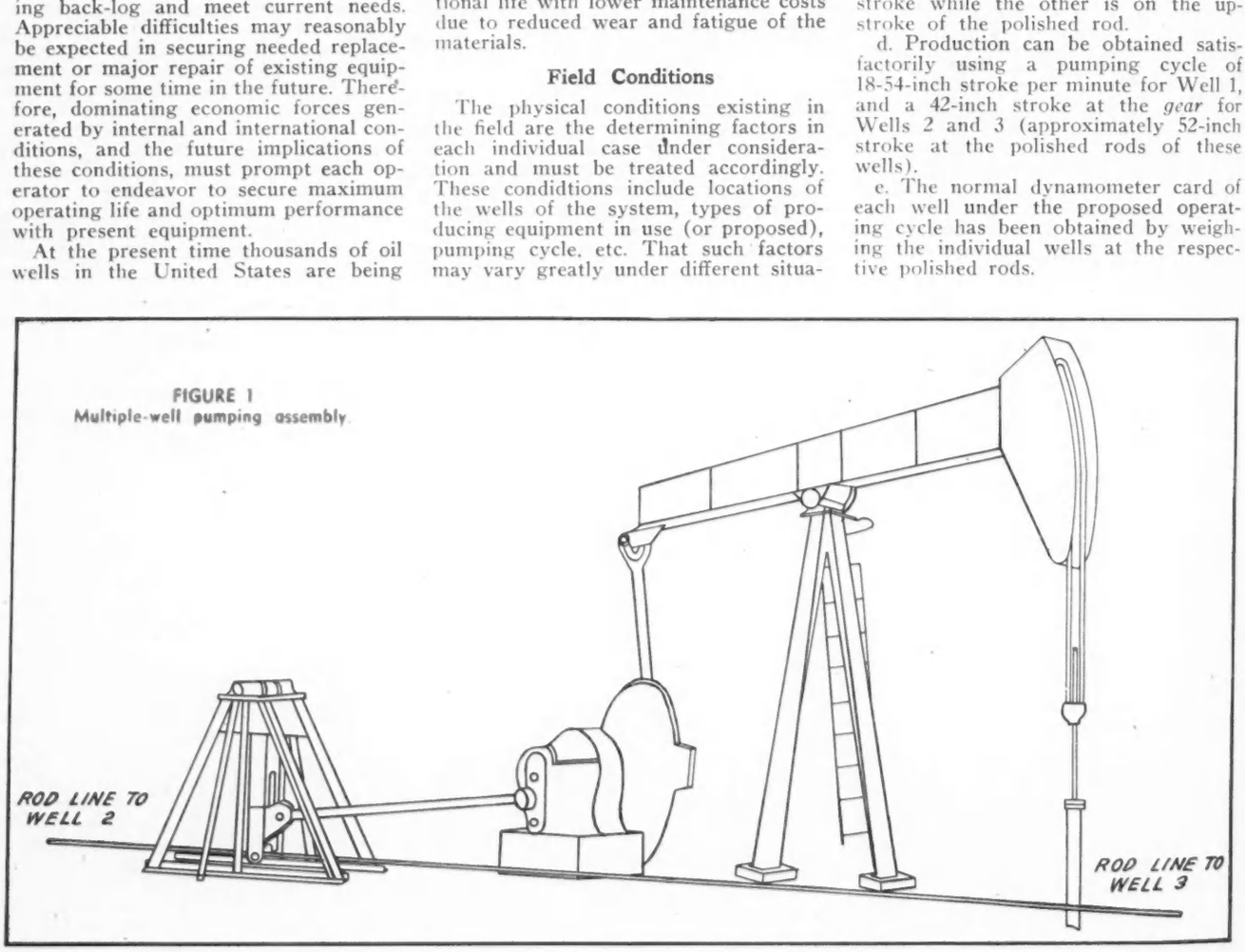


FIGURE 1
Multiple-well pumping assembly

# of Counterbalancing Pumping Assemblies

THIS is the second article dealing with the use of graphical mechanics as an aid in the solution of oil field problems encountered in the counterbalancing of pumping equipment. The first article[1] considered the problems connected with Individual Well Pumping Units. This one will deal with Multiple Well Pumping Assemblies, or back-cranking." The methods advanced are equally applicable to improving operating conditions of units already installed and in operation, or to calculating the desired operating conditions of prospective new installations. The first article considered the maintenance of existing equipment in use by improving existing operating conditions. However, the desired conditions of operation of prospective new installations can be calculated with a high degree of accuracy by utilizing graphical mechanics in analyzing the problems encountered. This will permit such installations to be made on a scientific basis and will tend to eliminate much of the "trial-and-error" adjustment of new equipment in the field. The present article will consider the second phase of the problem—i.e. calculation of desired operation conditions of prospective new installations.

Applied Mechanics

The mechanics of the entire system involved in the proposed multiple well pumping assembly will determine the application of graphical mechanics to the problem of properly counterbalancing the system. These factors must now be analyzed.

Transmitting Equipment

The individual well load of each well when operated with existing equipment under the proposed pumping cycle of the system is available for analysis. However, to use these data the linking mechanism, or equipment which transmits the stresses, must be considered.

a. Well 1: the transmitting equipment in this case is a typical individual well pumping unit. It has the general characteristics of such units. The physical dimensions can be obtained easily, either from mechanical drawings or from actual measurements of the unit. No special principles of applied mechanics need be used in analyzing the transmission of well load stress through the linking mechanism. Simple graphical mechanics can be used to secure the desired results.

One very important assumption will be made: angularity of the pitman will be ignored. This assumption leads to the logical conclusion that well loads acting on the polished rod will be transmitted without alteration through the linking mechanism to produce the same stress in the pitman.

b. Wells 2 and 3: the transmitting mechanism of these wells has certain characteristics very different from that of Well 1. The relative position of the back-crank pitman and rod lines, with their corresponding lever arms (in the stroke post) causes a multiplication effect of the well loads transmitted to the back-crank pitman. This must duly be taken into consideration in studying the resulting stresses on the gear.

The lengths of the rod lines are of great magnitude when compared to the diametrical distance traveled by the wrist pin of the back-crank during rotation of the gears. This factor greatly reduces the effect of angularity of the rod lines. Vibratory action of the rod lines, expansion and contraction of the rods, and even slight topographic variations of the surrounding terrain all tend to reduce the importance of the angularity of the rod lines. These facts permit the assumption to be made that the rod lines, in their various positions during the pumping cycle, are parallel to themselves at all times.

A second assumption relative to the transmitting equipment of Wells 2 and 3 can also be made in this specific case: the effects of the rod lines—weight or rods, friction, etc.—can be ignored as the wells operate opposite during pumping and the effects tend to cancel each other.

Well Loads Analyses

Having decided upon the operating conditions desired in the proposed multiple well pumping assembly and determined the principles of mechanics applicable to the system, the well loads should be analyzed to determine the torque conditions which will exist on the gear during the pumping cycle due to such loads. For simplicity of load analysis the system can be divided into two parts . . . Well 1, and Wells 2 and 3 . . . each of which can be considered individually. The total effect of the entire system will be the algebraic sum of the two parts.

Graphical mechanics furnishes a most efficient, yet simple method of making these analyses.

Load Analysis—Well 1

The magnitude of the well load at various key points of the pumping cycle can be determined easily by projecting selected front-crank positions to the corresponding points of the pumping cycle as shown on the dynamometer card, where the particular load (at that position) can be read from the curve of well load.

The graphical mechanics of such projection is identical with that used in the counterbalancing of individual well pumping units.[2] Figure 2 illustrates the method of carrying a selected front-crank position, 30 degrees, through the linking mechanism to its location on the well load curve on the dynamometer card. Here it should be noted that the *ZERO* position (Point 0 in Figure 2) has been chosen arbitrarily to be such that Well 1 is then at the end of the downstroke and the beginning of the upstroke of the polished rod. The selection of this zero position of the front-crank is purely arbitrary, but once made remains as the fixed zero or reference position for the entire system.

TABLE 1

Well Loads Data—Well 1

Front Crank Position (Degrees)	WELL LOADS DATA	
	Well Load F_w	Tangent Component F_t
0°	7,000	0
30°	9,800	+ 5,700
60°	11,200	+10,500
90°	9,800	+ 9,600
120°	9,800	+ 7,600
150°	10,400	+ 4,200
180°	8,300	0
210°	6,500	— 2,700
240°	5,000	— 3,900
270°	4,600	— 4,500
300°	5,500	— 5,100
330°	4,700	— 2,800
360°	7,000	0

Front Crank Position: 0° ..... End of Downstroke
60° ..... Maximum Well Load
180° ..... End of Upstroke

The line mechanics of the pumping unit and the physical dimensions of this equipment permit the speedy and accurate location of as many key points of the pumping cycle as may be desired for the analysis of well load distribution during the pumping cycle for Well 1. In general, selection of every 30-degree position of location of the front-crank during rotation will usually give a sufficient number of these key points, although any number desired can be used.

Once the magnitude of the well load at a given position of location of the front-crank during rotation is determined this load should be resolved into its torque-producing and flexural-producing components—i.e., components perpendicular and parallel to the front-

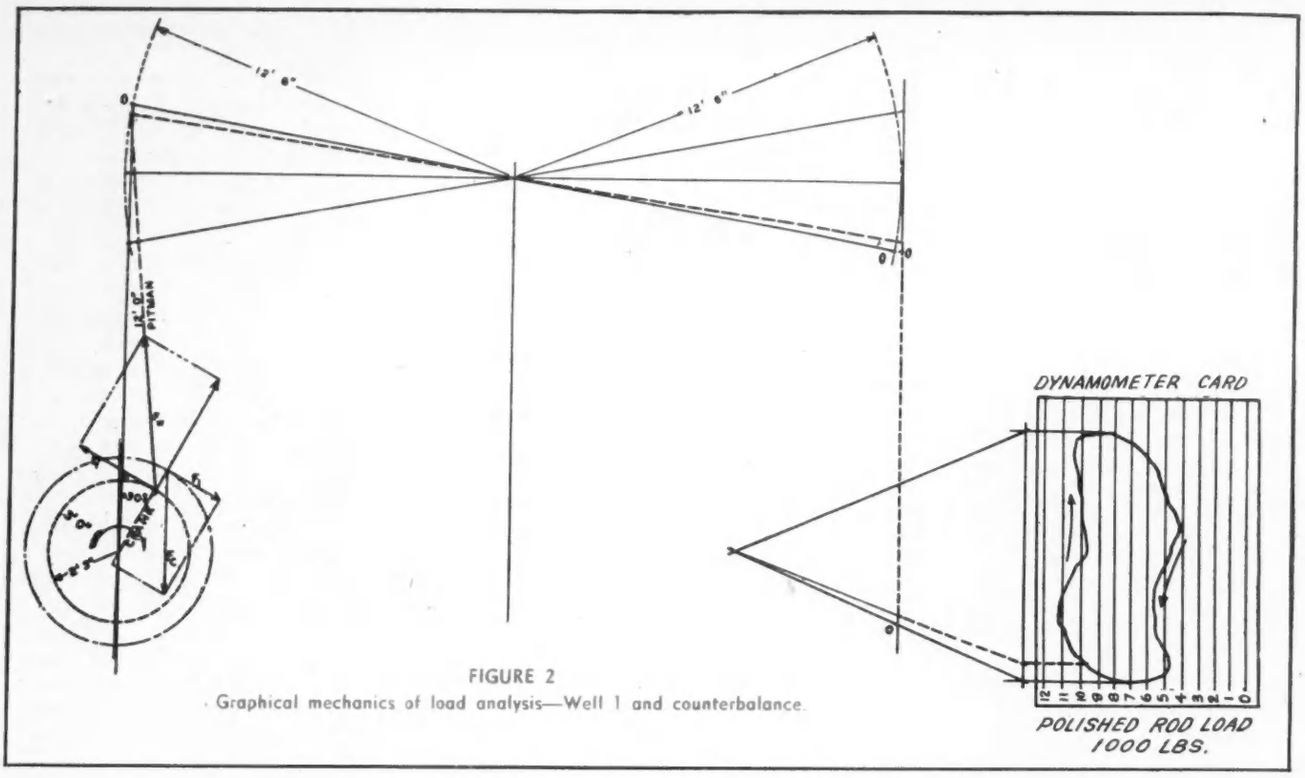


FIGURE 2

Graphical mechanics of load analysis—Well 1 and counterbalance.

crank. Only the torque-producing component, F_t, will be considered in this article, since the counterbalancing of existing equipment is desired instead of the design of new equipment. The graphical mechanics of this resolution of well load into its components is shown in Figure 2.

Table 1 presents the tabulated well loads and corresponding tangent components of the key points of location of the front-crank used in anlyzing the effect of Well 1 on the multiple well pumping assembly.

Load Analysis—Wells 2 and 3

Load analysis of the second part of the multiple well pumping assembly—Wells 2 and 3—is not as simple as in the case of Well 1. A line drawing of the back-crank, back-crank pitman and stroke post in their relative positions, both horizontal and vertical, must be made to scale. The zero position of the front-crank is now superimposed on the circle of travel of the back-crank so that both parts of the system will be referred to a common zero line. (This is not necessary mathematically but the use of this common zero line for the entire system will make the work simpler and clearer for those who may not recall readily the principles of advanced methematics and mechanics.)

The dynamometer cards of the wells are now placed along their respective rod lines. Care must be taken to see that these are placed in conformity with the desired operating conditions—i.e. one well being on the downstroke when the other well is on the upstroke of the polished rod.

Selected points of location of the back-crank during rotation, referred to the established zero position, are now carried through the linking mechanism to the corresponding points of well loads on the well load curves on the dynamometer cards. The net effect, or algebraic sum, of these two well loads is then used to determine the force acting on the back-crank pitman. The pitman load is next resolved into its torque-producing and flexural-producing components so that the torque produced upon the gear by the loads of Wells 2 and 3 may be computed.

Figure 3 presents the graphical mechanics of load analysis of Wells 2 and 3. Basically this is a line drawing of the linking mechanism of the back-crank part of the multiple well pumping assembly. It has been expanded to include a method of determining the loads of Wells 2 and 3 at any desired point of location of the back-crank during the pumping cycle. The positions of location selected are referred to the zero position of the front-crank by use of the common zero line of the system (indicated by Point 0 in Figure 3). Since the effects of both well loads are simultaneous, they must be so considered in the load analysis.

In the construction of Figure 3 the back-crank and stroke post were located in their correct relative positions horizontally and vertically and Points A and B, the end points of travel of the stroke post, were established. This was done by considering one point, A, to occur when the back-crank and back-crank pitman form a straight line with the wrist pin on the far side of the circle of rotation of the back-crank with reference to the position of the stroke post. Point B would then occur when the back-crank and back-crank pitman form a straight line with the wrist pin on the near side of the circle of rotation of the back-crank. Graphically, the location of Point A can be acomplished by subtracting the length of the back-crank crank arm from the length of the back-crank pitman and swinging the resulting length as a radius of a circle from the back-crank crank pin position as a pivot point to its intersection on the arc of travel of the pitman connection on the stroke post. Similarily, Point B would be located by using the sum of the lengths of these two members as the radius of the circle and the same pivot point. This use of the back-crank crank pin position as a pivot point corresponds to the physical conditions of operations of the equipment in the field.

Points A and B are next projected radially to their respective positions on the arc of travel of the rod line connection on the stroke post.

An arbitrary distance is used along the rod line in the direction of Well 2 and Points A and B thus established determine the limits of the polished rod travel of the well as indicated by the rod line. The same method is used to establish the limits of travel of the polished rod of Well 3 as indicated by its rod line. Here it may be reemphasized that the distances used are arbitrary and do not need to be the same in both cases as long as consistancy in each case is observed.

This construction permits any given location of the back-crank to be projected to its corresponding position on the line of motion of the rod lines of the two wells. Graphically, this can be done by placing the divider point at the back-crank wrist pin point of the location to be investigated and with a length equal to the length of the back-crank pitman intersect the arc of travel of the pitman connection on the stroke post. This point of intersection is then projected radially to the arc of travel of the rod line connection. Using the arbitrary distances previously established in locating Points A and B on the rod lines of the two wells the given point is projected parallel to the line A - B these distances in the respective directions. Vertical projection of these

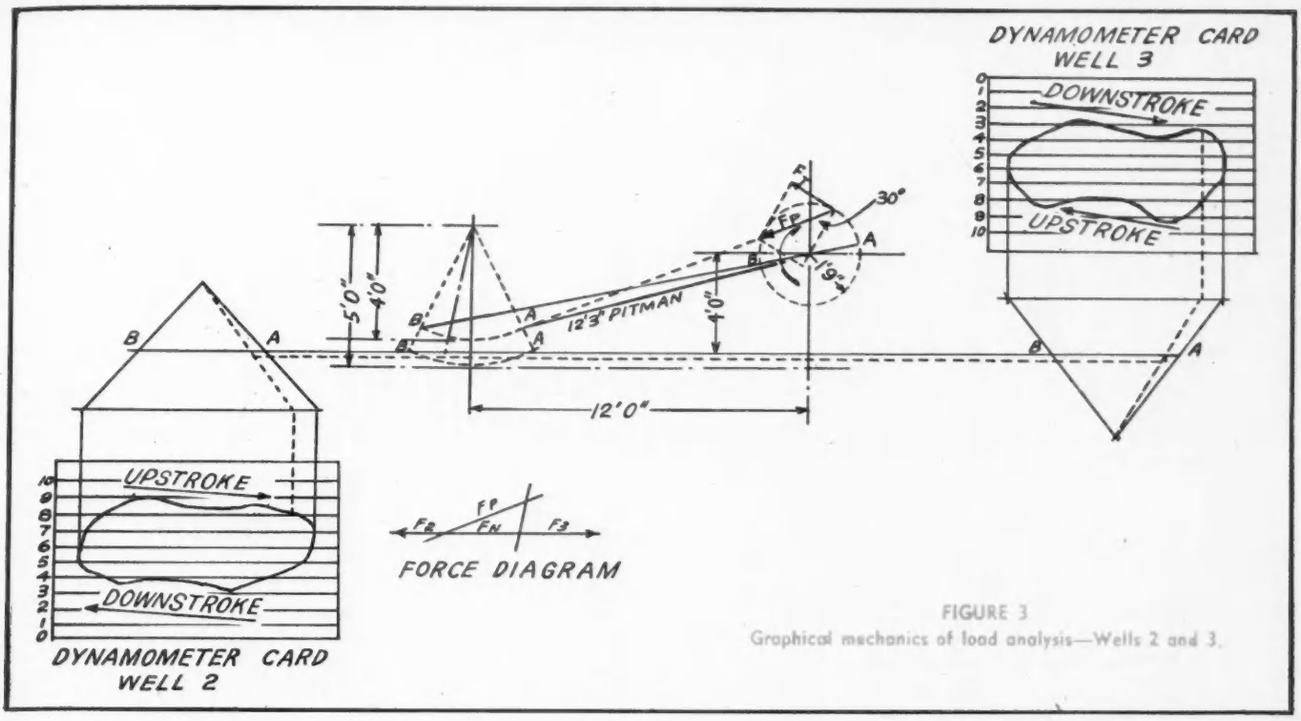


FIGURE 3
Graphical mechanics of load analysis—Wells 2 and 3.

two points (one on each rod line) will establish the given point in its proper respective positions on the reference line of rod lines travel, A - B. (Note: This parallel projection of the point can be justified by the previous assumption of non-angularity effect of the rod lines.)

The dynamometer card of each well is placed so that the path of travel of the polished rod is parallel to its indicated travel as reflected in the motion of the rod lines. From the end points of the card lines are projected vertically (perpendicular to the line of travel of the polished rod) and intersected by a reference line which is parallel to the line of travel of the polished rod, and also parallel to the line of motion of the rod lines. Lines are then drawn through the end points of the reference line and the Points A and B, as shown in Figure 3 to form a triangle of projection.

By this construction the location of any point on the line A-B can be projected to its relative position on the reference line by connecting the point and the apex of the triangle with a straight line and extending this line to its intersection with the reference line. From this point of intersection vertical projection to the well load curve on the dynamometer card will give the well load corresponding to the chosen point on line A-B.

A visual example will clarify the methods described above. Such an example is illustrated in Figure 3, showing the determination of the well loads of Wells 2 and 3 when the back-crank is 30 degrees clockwise from the zero position of the system.

Back-Crank Pitman Load

The magnitudes of the well loads of Wells 2 and 3 having been determined, the stresses produced in the back-crank pitman by these loads can now be calculated. This can be done graphically by use of a force diagram and the principles of applied mechanics.

In the actual equipment the well loads are transmitted through the rod lines to the stroke post, which oscillates around a fixed pivot and transmits the stress to the back-crank pitman. This effect is the same as three forces acting on a single member—one force being the net well load of Wells 2 and 3, a second force being the back-crank pitman load, and the third force being the reaction stress produced in the pivot of the stroke post by the other two forces. The stroke post is the member on which the forces act.

The magnitudes of all three forces can be found graphically since the magnitude of one and the directions of all are known.

The well load of each well is plotted as a vector using the proper magnitude and direction of each. The algebraic sum of these two well loads—the net well load of Wells 2 and 3—is then determined. Through the end point of this vector of net well load (which will be parallel to the rod lines) a line is drawn parallel to the back-crank pitman. Another line is drawn through the other end point of the net well load vector. This second line is parallel to the line passing through the pivot point of the stroke post and the point of intersection of the back-crank pitman with the corresponding line of rod lines (line of action of reaction stress in the stroke post pivot). These three lines form a force diagram the sides of which are vectors of the forces desired.

The back-crank pitman load is next resolved into its torque-producing and flexural-producing components. As in the case of Well 1 only the torque-producing component will be considered since the counterbalancing of existing equipment is desired instead of the design of new equipment.

Figure 3 presents the force diagram and resolution of the pitman load into its desired components for the illustrative position of location of the back-crank.

Back-Crank Location

The location of the back-crank on the shaft with respect to the front-crank will have an appreciable effect upon the torque produced upon the gears. This factor must be given due consideration the same as the loads of the individual wells.

Most commercial back-crank equipment in use has been equipped with three keyways which permit three different locations of the back-crank on the shaft with respect to the front-crank. Normally these positions are 90 degrees apart.

Use of the methods advanced in this article will permit an easy and speedy analysis of the well loads for any position of location of the back-crank with respect to the front-crank. Since a common zero line was established for the system, the position of the back-crank location becomes merely a starting point for bringing the two parts of the system together. For example, if the back-crank is located 90 degrees clockwise from the position of the front-crank the load effects of the two parts of the system will be offset the same amount; that is, the loads at the zero position of Well 1 and the 90-degree position of location of the back-crank will act simultaneously. A similar offset of loads will occur throughout the entire pumping cycle.

Should a continuous analysis of different locations of the back-crank be desired, load curves of the two parts of the system may be plotted on separate sheets of paper, superimposed, and rotated to any desired relative position of location of the back-crank with respect to the front-crank and the corresponding loads of each part for key points of the pumping cycle be determined. From a physical standpoint this would correspond to a back-crank that was adjustable on the shaft and

TABLE 2

Well Loads Data—Wells 2 and 3

Front Crank Position (Degrees)	Back Crank Position (Degrees)	WELL LOADS DATA Well Load Well 2 F_2	Well Ladd Well 3 F_3	Net Well Load F_w	Pitman Load F_p	Tangent Component F_t
POSITION 1						
0°	0°	8,500	3,800	4,700	5,900	+ 5,400
30°	30°	8,100	3,300	4,800	5,900	+ 3,700
60°	60°	7,500	4,300	3,200	3,700	+ 800
90°	90°	5,300	6,800	1,500	1,700	+ 400
120°	120°	4,200	8,500	4,300	5,000	+ 3,200
150°	150°	3,100	9,100	6,000	7,300	+ 6,700
180°	180°	3,600	7,900	4,300	5,900	+ 5,400
210°	210°	3,500	8,400	4,900	6,500	+ 5,200
240°	240°	4,500	7,200	2,700	3,600	+ 1,300
270°	270°	6,700	4,700	2,000	3,200	+ 800
300°	300°	8,500	3,600	4,900	7,100	+ 5,500
330°	330°	8,500	3,200	5,300	7,300	+ 7,100
360°	360°	8,500	3,800	4,700	5,900	+ 5,400
POSITION 2						
90°	0°	5,300	6,800	1,500	1,700	+ 400
120°	30°	4,200	8,500	4,300	5,000	+ 3,200
150°	60°	3,100	9,100	6,000	7,300	+ 6,700
180°	90°	3,600	7,900	4,300	5,900	+ 5,400
210°	120°	3,500	8,400	4,900	6,500	+ 5,200
240°	150°	4,500	7,200	2,700	3,600	+ 1,300
270°	180°	6,700	4,700	2,000	3,200	+ 800
300°	210°	8,500	3,600	4,900	7,100	+ 5,500
330°	240°	8,500	3,200	5,300	7,300	+ 7,100
360°	270°	8,500	3,800	4,700	5,900	+ 5,400
30°	300°	8,100	3,300	4,800	5,900	+ 3,700
60°	330°	7,500	4,300	3,200	3,700	+ 800
90°	360°	5,300	6,800	1,500	1,700	+ 400
POSITION 3						
0°	180°	3,600	7,900	4,300	5,900	+ 5,400
30°	210°	3,500	8,400	4,900	6,500	+ 5,200
60°	240°	4,500	7,200	2,700	3,600	+ 1,300
90°	270°	6,700	4,700	2,000	3,200	+ 800
120°	300°	8,500	3,600	4,900	7,100	+ 5,500
150°	330°	8,500	3,200	5,300	7,300	+ 7,100
180°	360°	8,500	3,800	4,700	5,900	+ 5,400
210°	30°	8,100	3,300	4,800	5,900	+ 3,700
240°	60°	7,500	4,300	3,200	3,700	+ 800
270°	90°	5,300	6,800	1,500	1,700	+ 400
300°	120°	4,200	8,500	4,300	5,000	+ 3,200
330°	150°	3,100	9,100	6,000	7,300	+ 6,700
360°	180°	3,600	7,900	4,300	5,900	+ 5,400
POSITION 4						
270°	0°	6,700	4,700	2,000	3,200	+ 800
300°	30°	8,500	3,600	4,900	7,100	+ 5,500
330°	60°	8,500	3,200	5,300	7,300	+ 7,100
360°	90°	8,500	3,800	4,700	5,900	+ 5,400
30°	120°	8,100	3,300	4,800	5,900	+ 3,700
60°	150°	7,500	4,300	3,200	3,700	+ 800
90°	180°	5,300	6,800	1,500	1,700	+ 400
120°	210°	4,200	8,500	4,300	5,000	+ 3,200
150°	240°	3,100	9,100	6,000	7,300	+ 6,700
180°	270°	3,600	7,900	4,300	5,900	+ 5,400
210°	300°	3,500	8,400	4,900	6,500	+ 5,200
240°	330°	4,500	7,200	2,700	3,600	+ 1,300
270°	360°	6,700	4,700	2,000	3,200	+ 800

Front Crank Position:
0° ..... End of Downstroke—Well 1
60° ..... Maximum Well Load—Well 1
74° 45′ ..... End of Upstroke—Well 12 (Point A)
End of Downstroke—Well 3
136° 30′ ..... Maximum Well Load—Well 3
154° 15′ ..... Minimum Well Load—Well 2
180° ..... End of Upstroke —Well 1
257° 30′ ..... End of Upstroke—Well 3
End of Downstroke—Well 2
Minimum Well Load—Well 1
314° 30′ ..... Maximum Well Load—Well 2
Minimum Well Load—Well 3

which could be located at any desired position.

Table 2 presents the well loads of Wells 2 and 3 for four different locations of the back-crank with respect to the front-crank for every 30 degrees of rotation throughout the pumping cycle. These positions are 0, 90, 180 and 270 degrees clockwise, respectively, from the front-crank.

Mathematical Conventions

Both the *magnitude* and the *direction* of the stresses involved in the counterbalancing calculations must be considered in order to determine the net effect of such stresses on the multiple well pumping assembly at any given time. The magnitude of the stresses can be obtained from the dynaometer cards of the individual wells by the methods already described. It will be necessary to adopt some mathematical convention of sign or sense of direction to designate the direction of action of any given stress. Any convention can be adopted arbitrarily.

Since it is desirable to deal principally with positive forces the following mathematical conventions are arbitrarily adopted for convenience of calculations: *positive forces* are those which *oppose* the rotation of the crank arm (both front-crank and back-crank); *negative forces* are those which *aid* the rotation of the crank arm. This convention of sign of direction is the same as adopted in the first article of this series.

Torque Calculations

The torque conditions existing on the gear during the pumping cycle of the multiple well pumping assembly can now be calculated. Each part of the system must be considered separately again.

The torque produced on the gear by the well load of Well 1 can be computed by multiplying the tangent component of well load, F_t, by the lever arm, which will be the length of the front-crank crank arm. The torque produced on the gear by the net well load of Wells 2 and 3 can be computed by multiplying the tangent component of the back-crank pitman load by its proper lever arm, which is the length of the back-crank crank arm.

The total torque for any given position of the pumping cycle is the algebraic sum of the individual torques of each part of the system.

Table 3 is a tabulation of well load torques for every 30-degree position of the pumping cycle for each of the four positions of location of the back-crank considered in this article.

Torque Analysis

Analysis of the Torque Curves: The data contained in Table 3 should be plotted as a preliminary step in the torque analysis. This plotting can generally be done more satisfactorily using polar coordinates rather than the Cartesian coordinates.

Figure 4 is a plot of total well loads torque for each of the four positions of location of the back-crank. A study of the curves of Figure 4 shows that in each position of back-crank location there exists considerable variations in torque stresses and also reversals of stress during the pumping cycle.

A true circle of the torque curve would be the desired operating condition as this would give constant torque conditions throughout the pumping cyle. It will be noticed that in this particular case, positions 1 and 3 more nearly approach a circle than do positions 2 and 4.

Rigidity of the Torque Curves For simplicity of analysis it may be assumed that the Torque Curve is rigid and may be moved or shifted about the graph without appreciable distortion so as to indicate possible improved operating conditions. Acting upon this assumption of the rigidity of the torque curve it is seen that all four of the curves need to be shifted to the right as this will cause them to approximate the desired circle shape of optimum operating conditions. This shift to the right can be made so as to reduce the maximum torque and increase the minimum torque to such a degree as to eliminate all reversals of stress.

This indicates that it is possible to counterbalance the multiple well pumping assembly so that satisfactory operating conditions can be secured with the back-crank in any of the four positions.

Counterbalancing

The approximate amount of change to be made to counterbalance properly the multiple well pumping assembly is indicated by the torque curves of well loads. Reference to these data shows that the maximum torque for the four positions under consideration varies from some +281,000 to +433,000 inch-pounds, occurring at 60 degrees. The minimum torque for these positions varies from approximately —48,000 to —113,000 inch-pounds, and occurs at some 270 degrees clockwise from the zero reference position.

A counterbalance which would give a value about the average of these variations—approximately 200,000 inch-pounds—with the effect in the opposite direction, should satisfactorily counterbalance the system for all selected positions of back-crank location. Assuming counterbalancing is to be done using a rotary type counterbalance ex-

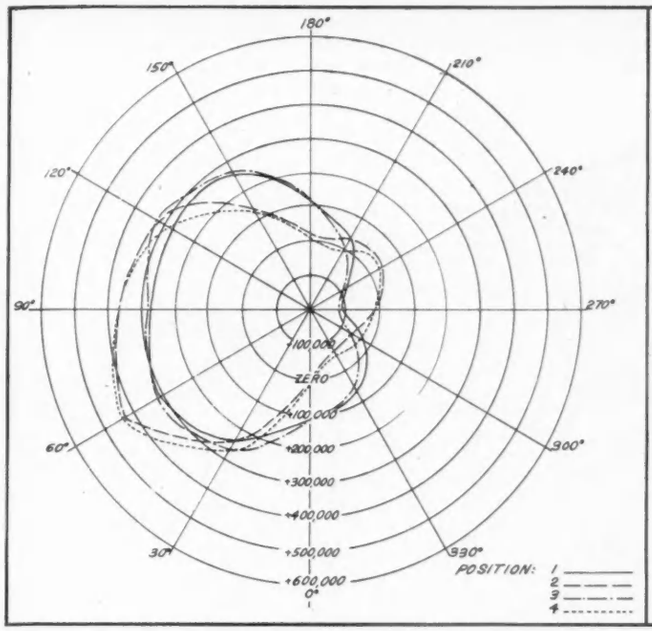


FIGURE 4
Torque curves of well loads.

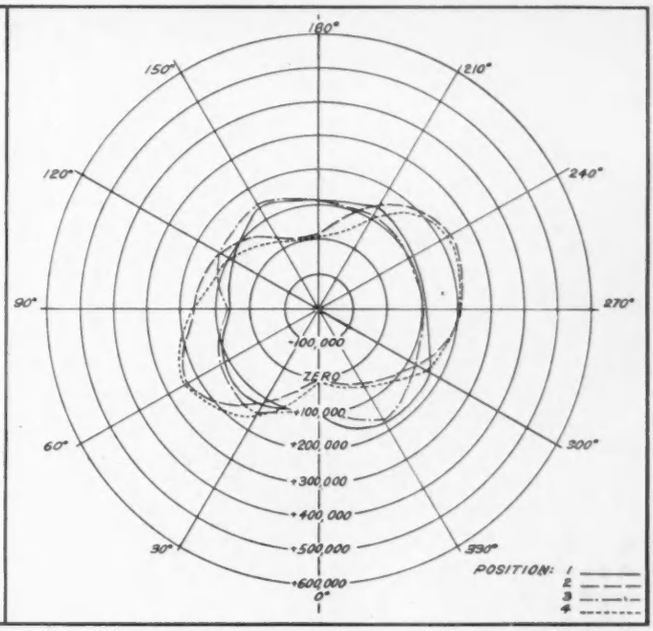


FIGURE 5
Torque curves—counterbalanced assembly.

clusively, the desired effect can be obtained by installing a 6000-pound counterbalance having a center of gravity of 36 inches. This counterbalance will be installed on the front-crank.

To check the accuracy of this estimate the counterbalance is placed on the front-crank (graphically) and its effect during the pumping cycle is determined. Figure 2 shows the graphical mechanics of resolving the counterbalance into its torque-producing and flexural-producing components for a selected point of the pumping cycle of the system.

Table 4 presents the counterbalancing data of the multiple well pumping assembly, showing the distribution of counterbalancing torque during the pumping cycle and the resultant torque acting on the gear of the counterbalanced assembly.

Plotting the data of the counterbalanced assembly shows that the desired results have been obtained. Figure 5 is a plot for each of the four positions of back-crank location in the counterbalanced multiple well pumping assembly.

It will be seen that the final counterbalanced system approaches a circle of constant torque conditions with no reversals of stress. Positions 1 and 3 in this particular case give more desirable operating conditions for the multiple well pumping assembly than do positions 2 and 4 of the back-crank location.

Commentary

In conclusion, it may be stated that here only the methods and results have been stressed. In any given case it is possible to secure additional refinement of final results by sucessively applying the methods presented until the optimum counterbalancing has been secured obtainable with the limitations of operating conditions in the specific case under consideration.

Acknowlegement

The author wishes to acknowledge the assistance given him by Dr. C. D. Crosno, Professor of Engineering, New Mexico School of Mines; Lufkin Foundry and Machine Company; Continental Supply Company; and the various engineers and students of engineering who aided and encouraged him in this work.

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[1] "Graphical Mechanics of Counterbalancing Individual Pumping Units," J. I. Lauderdilk, The Oil Weekly, September 28, 1942.
[2] Ibid.

TABLE 3
Well Loads Torque

Front Crank Position (Degrees)	Well Loads Torque Well 1	Well Loads Torque Wells 2 & 3	Total Well Loads Torque	Well Loads Torque Wells 2 & 3	Total Well Loads Torque
		POSITION 1		POSITION 2	
0°	0	+113,400	+113,400	+ 8,400	+ 8,400
30°	+153,900	+ 77,700	+231,600	+ 69,200	+223,100
60°	+283,500	+ 16,800	+300,300	+140,700	+424,200
90°	+259,200	+ 8,400	+267,600	+113,400	+372,600
120°	+205,200	+ 69,200	+274,400	+109,200	+314,400
150°	+113,400	+140,700	+254,100	+ 27,300	+140,700
180°	0	+113,400	+113,400	+ 16,800	+ 16,800
210°	— 72,900	+109,200	+ 36,300	+115,500	+ 42,600
240°	—105,300	+ 27,300	— 78,000	+149,100	+ 43,800
270°	—121,500	+ 16,800	—104,700	+113,400	— 8,100
300°	—137,700	+115,500	— 22,200	+ 77,700	— 60,000
330°	— 75,600	+149,100	+ 73,500	+ 16,800	— 58,800
360°	0	+113,400	+113,400	+ 8,400	+ 8,400
		POSITION 3		POSITION 4	
0°	0	+113,400	+113,400	+ 16,800	+ 16,800
30°	+153,900	+109,200	+263,100	+115,500	+269,400
60°	+283,500	+ 27,300	+310,800	+149,100	+432,600
90°	+259,200	+ 16,800	+276,000	+113,400	+372,600
120°	+205,200	+115,500	+320,700	+ 77,700	+282,900
150°	+113,400	+149,100	+262,500	+ 16,800	+130,200
180°	0	+113,400	+113,400	+ 8,400	+ 8,400
210°	— 72,900	+ 77,700	+ 4,800	+ 69,200	— 3,700
240°	—105,300	+ 16,800	— 88,500	+140,700	+ 35,400
270°	—121,500	+ 8,400	—113,100	+113,400	— 8,100
300°	—137,700	+ 69,200	— 68,500	+109,200	— 28,500
330°	— 75,600	+140,700	+ 65,100	+ 27,300	— 48,300
360°	0	+113,400	+113,400	+ 16,800	+ 16,800

TABLE 4
Counterbalance Data

Front Crank Position (Degrees)	Counterbalance Tangent Component F_1	Counterbalance Torque	Resultant Torque Counterbalanced Assembly	
			Position 1	Position 2
0°	— 100	— 3,600	+109,800	+ 4,800
30°	—3,000	—108,000	+123,600	+115,100
60°	— 5,200	—187,200	+113,100	+237,000
90°	— 5,900	—212,400	+ 55,200	+160,200
120°	— 5,200	—187,200	+ 87,200	+127,200
150°	— 3,000	—108,000	+145,100	+ 32,700
180°	+ 100	+ 3,600	+117,000	+ 20,400
210°	+ 3,000	+108,000	+144,300	+150,600
240°	+ 5,200	+187,200	+109,200	+231,000
270°	+ 5,900	+212,400	+107,700	+204,300
300°	+ 5,200	+187,200	+165,000	+127,200
330°	+ 3,000	+108,000	+181,500	+ 49,200
360°	— 100	— 3,600	+109,800	+ 4,800
			Position 3	Position 4
0°	— 100	— 3,600	+109,800	+ 13,200
30°	— 3,000	—108,000	+155,100	+161,400
60°	— 5,200	—187,200	+123,600	+245,400
90°	— 5,900	—212,400	+ 63,600	+160,200
120°	— 5,200	—187,200	+133,500	+ 95,700
150°	— 3,900	—108,900	+154,500	+ 22,200
180°	+ 100	+ 3,600	+117,000	+ 12,000
210°	+ 3,000	+108,000	+112,800	+104,300
240°	+ 5,200	+187,200	+ 98,700	+222,600
270°	+ 5,900	+212,400	+ 99,300	+204,300
300°	+ 5,200	+187,200	+116,700	+158,700
330°	+ 3,000	+108,000	+173,100	+ 59,700
360°	— 100	— 3,600	+109,800	+ 13,200

Natural gasoline extracted from wet gas from oil wells is stored in pressure tanks while awaiting shipment. Storage pressure range up to 50 pounds.

Field Cooperation Reduces Flare Gas

By GORDON B. NICHOLSON, Staff Writer

THE Wasson field of Gaines and Yoakum counties, West Texas, now exemplifies progress toward proper utilization of all oil and gas produced. Close cooperation of operators in the field in conjunction with operations of two natural gasoline plants by Shell Oil Company and Coltexo Corporation have brought a conspicuous decline in the volume of gas vented, in addition to bringing increased revenue to leaseholders and royalty owners by their participation in the program. Residue gas from the two plants now has field and commercial outlets, the only exception being those portions of gas resulting from irregularities in the producing of wells which cause daily and hourly variations in intake volume of gas received at the plants. With continued and increased cooperation from leaseholders connected with the plant's gathering and processing system, vented residue gas will be further reduced, and can conceivably be eliminated entirely, with establishment of production at a regular rate on a 24 hours-per-day, 30 days-per-month basis.

Individual wells in the Wasson field produce with gas-oil ratios which as a whole are quite favorable. But with the large volume of oil produced daily, amounting to some 48,000 barrels, and average ratios being about 1350 cubic feet of gas per barrel, normal gas production runs high into the millions of cubic feet, most of which would be flared near the points of production if gasoline plant facilities were not available. Flaring of gas at separators would mean a daily loss of thousands of gallons of valuable liquids, in addition to irretrievable loss of dry or residue gas as a fuel.

Value of Cooperation

The value of cooperative effort is clearly demonstrated in the Wasson field. Located in the non-industrialized section of West Texas near the New Mexico border. few sizeable communities are near enough to be regarded as potential consumers of gas. However, the knowledge that gas is available encourages the establishment of industries which in increasing numbers are converting to gas as a fuel of commercial utility. This assurance of obtaining fuel gas in sufficient quantities is often a factor in creating a demand and in establishing a new industry.

Residue gas, then, is bringing industry to the West Texas areas where it is known to be available, and sections of the plains country which formerly were hosts only to countless cattle are now witnessing the construction of chemical plants, carbon black factories, electric power plants, and gas lines, in addition to the natural gasoline plants which make the residue gas available.

The establishment facilities to recover this liquid hydrocarbon content and also commercial outlets for residue gas to furnish domestic and industrial power furthers conservation of this natural resource. The amount of residue gas that can be sold to industries is no more than the total output of the lowest hour of the minimum day in the month, which is the known volume obtainable, and negotiations for contracting the gas are made on that basis. Only the excess gas received during flush periods is vented, and that consists of gas produced in excess of the volume which can be guaranteed to residue gas consumers.

Hence, the outlet for the residue gas at Wasson has thus far been dependent on the amount of gas which can be promised to the consumers. This in turn is based on current allowables and the cooperation of all operators connected with the gas system. Crude allowables are based largely on the demand for oil, and are adjusted proportionately. Already the Texas Railroad Commission has cooperated fully in assuring the two plants a regular daily intake of gas by allowing the field to produce on a 30-days-per-month schedule. Operators have made considerable progress towards staggering producing periods during the day and week to assure a regular hourly feed to the plants, and so elimi-

Plant 1 uses weekly recording charts which show clearly the peak and low pressure periods which exist each day, and also the weekend reduction in pressure caused by shutting in wells. Optimum disposal of residue gas can only be attained by eliminating the high and low producing periods.

nate "peak" and "low" periods. If the optimum producing conditions could be attained to assure the same volume of intake gas per hour for every day of the month, all residue gas produced could be guaranteed to the consumer, and flaring of gas practically eliminated.

Such a program can only be accomplished by full cooperation between producers connected with the plant system, and involves a staggering production program shared by all producers by which approximately the same number of wells will produce during each hour of the day and night. Only then will the present "peak" and "low" period which occur over a 24-hour period disappear, and the load reaching the plants will be almost identical at all hours.

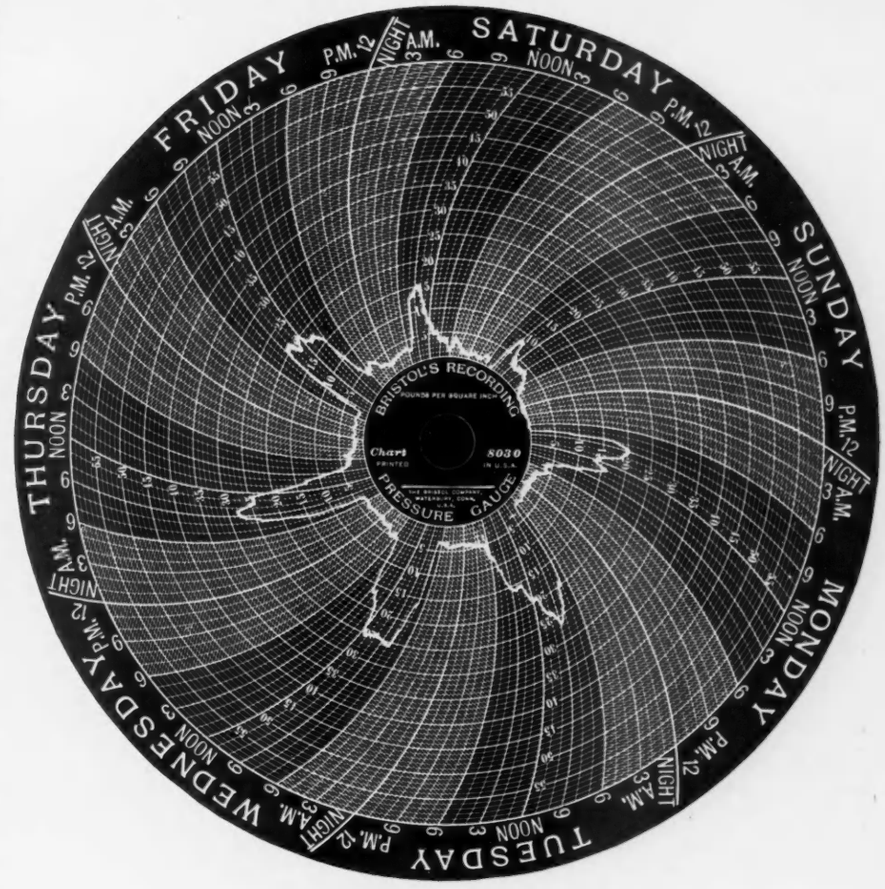
Prolific Source

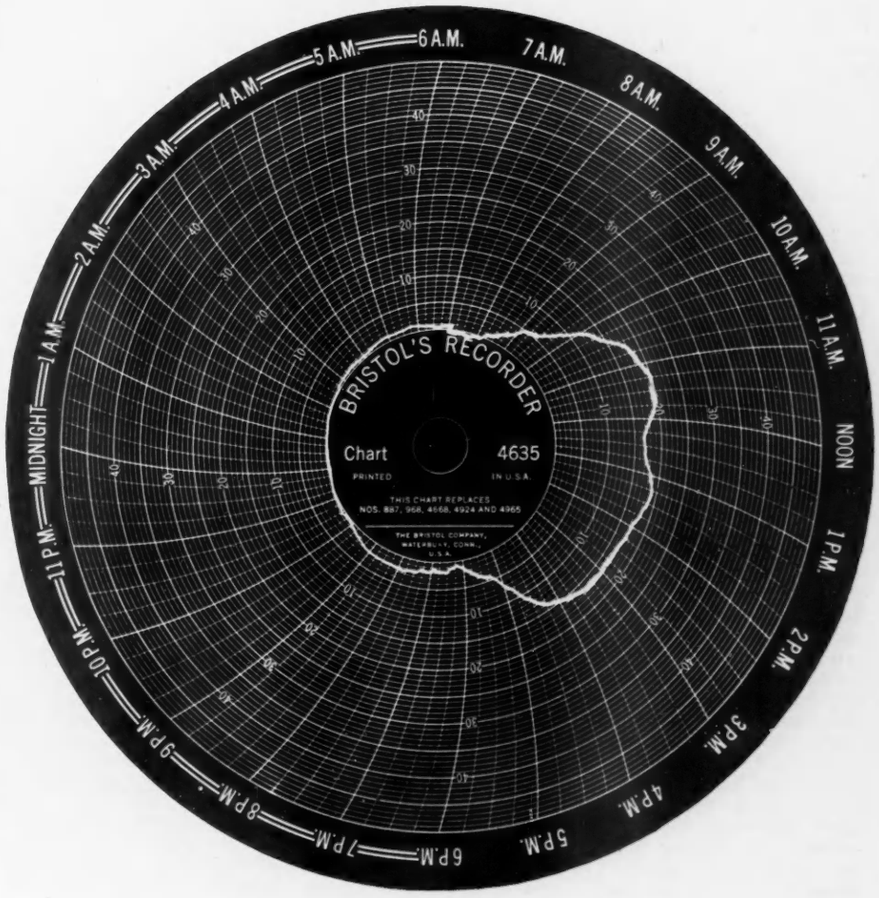
Regarded as one of the biggest discoveries in West Texas, the Wasson field has been a prolific source of oil and gas since production was first obtained from the San Andres formation in April, 1936, and on January 1, 1946, produced from 1551 wells. Subsequent exploration after the discovery well was completed unearthed deeper production from the Clearfork formation found around 6300 feet and at a lower level of 7100 feet, but with the exception of about 20 wells, all wells in the field produce from the original formation, which has alone yielded more than 100 million barrels of 33-gravity oil. At present, all wells flow normally except 189 which produce by artificial lift.

The two gasoline plants operated by Shell receive gas from 1409 wells which represent 91 percent of the wells in the field, the only exceptions being a few widely dispersed edge wells whose remote locations and sparse gas output fail to justify the expense of connecting with the system. Due to the nature of the edge wells which produce the least volume of gas, the two gasoline plants actually receive in excess of 91 percent of total gas available in the field.

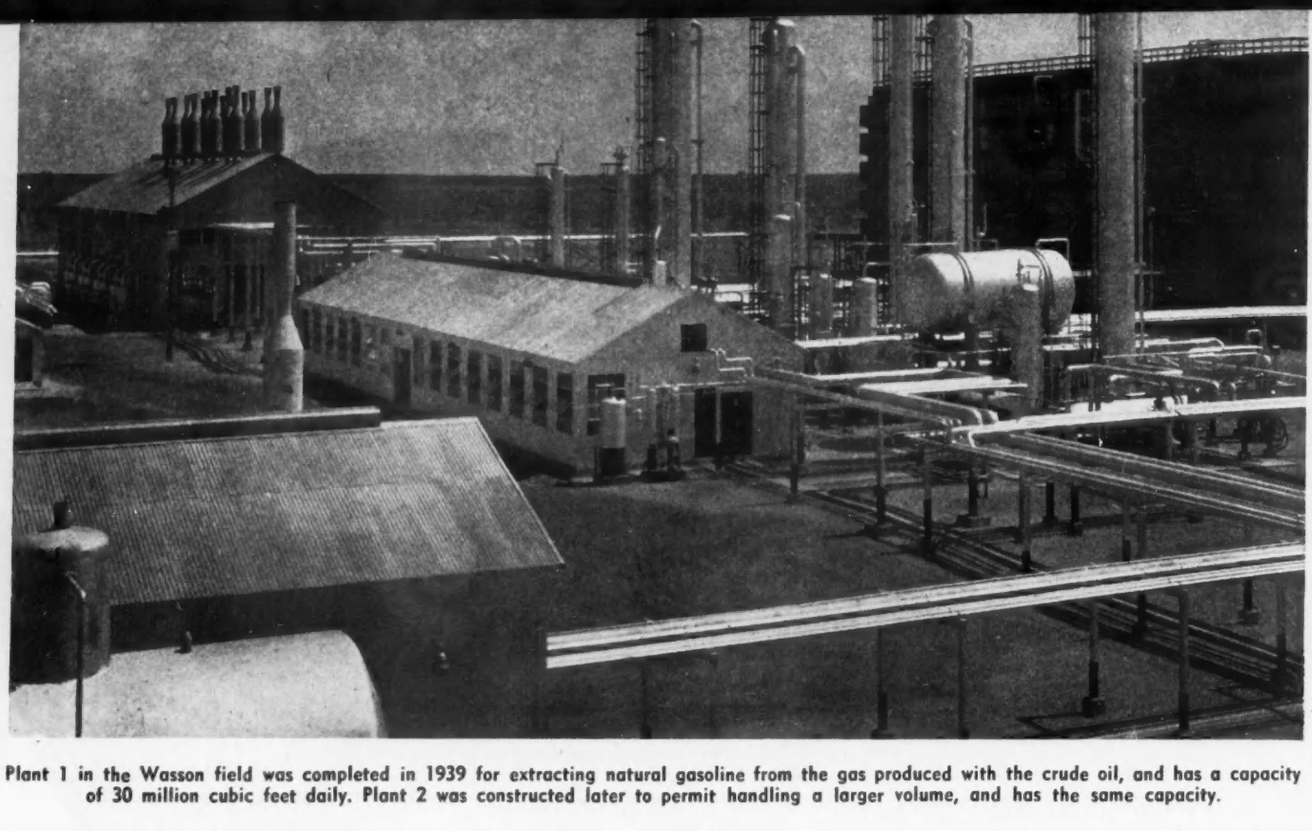
Shell's two high-pressure absorption plants are of equal capacity. each normally processing 30 million cubic feet of gas daily. Plant 1 was completed in the fall of 1939, 3½ years after the field was discovered, and at that time was capable of meeting all foreseeable requirements. With later expansion of the Wasson field, however, the plant capacity was insufficient, and the second plant was constructed, and placed in operation in December, 1944. During peak loads resulting from high war-time allowables, the two plants processed 70 million cubic feet daily, although with the present reduced allowables, normal intake ranges between 50 and 60 million cubic feet.

Value of the increased returns to all





Daily charts show intake gas pressures at Wasson 2. A typical midweek chart shows a "peak" period during the day when most wells are producing, and a "low" period at night.



Plant 1 in the Wasson field was completed in 1939 for extracting natural gasoline from the gas produced with the crude oil, and has a capacity of 30 million cubic feet daily. Plant 2 was constructed later to permit handling a larger volume, and has the same capacity.

participants in the cooperative program is shown in actual figures regarding gasoline content of the raw gas. Each 1000 cubic feet of gas formerly vented at the separators contains 1.34 gallons of gasoline, or if figured at normal capacity of the plants, 60 million cubic feet, equals 1938 barrels daily of valuable liquids for which each leaseowner receives remuneration at no added expense.

Shell constructed an extensive field gathering system composed of parallel intake and residue lines extending to all leases which furnish gas, with size of the pipe ranging from three inches used in the outlying districts and near individual wells, up to 24 inches as the lines near the plants. The smaller lines converge with other successively larger pipes in the system, until each plant is fed through three main intake lines, the No. 1 plant served by three 20-inch lines, and the No. 2 plant by a 16-inch, a 20-inch, and a 24-inch line. Raw gas from each lease is measured by recording meters for the protection of each leaseholder, whose compensation is calculated on the basis of the meter readings. The three main lines entering each plant are equipped with master totalizing meters which give the total intake of the plants through each line and furnish a check on the individual lease meters.

Residue gas lines parallel the intake lines between the plants and leases, and were constructed to return residue gas to the leaseholders. Gas is metered as it leaves the plant by the return lines of the leases, with pressure boosted to 175-200 pounds. Scope of the program is reflected by the length of line laid for the gathering and residue system which totals 325 miles, including lines of all sizes used. Lines and meters were furnished and installed by Shell, which also provides maintenance service.

Recording gauges provide accurate determination of pressures at which gas is received by the two plants, the No. 1 plant having weekly charts, and No. 2 plant daily charts. With optimum staggering of producing periods of wells in the field by all operators, the intake pressures shown on the charts would remain unchanged over a 24-hour and seven-day period, and hence show just enough pressure to prove that gas being received is sufficient to meet demands of the plants. At present, this objective has been approached but not yet attained, and the charts show daily cycles of peak and low production, with pressures reaching a maximum of 15 to 25 pounds per square inch during the daylight hours between 8 and 3 o'clock, and declining to zero readings at night when many wells are shut in. A similar drop in pressure is evident on Saturdays and Sundays when many wells are shut in. Records show that at times, only 50 percent by volume of gas is received during the lowest periods as is received during peak periods. The volume of gas available to the consumer and thus the amount that can be contracted for sale is necessarily reduced to this lower amount.

Residue Gas

Of the total daily residue gas production, a certain amount is retained for use in the field and thus is not available for outside sale. This figure includes the gas used for lease fuel and for plant and camp fuel, in addition to a certain percentage of total gases which is lost by extraction during processing. Gas in excess of the amount needed to meet these requirements is available for other disposition.

One outlet for residue gas from the two plants is the Southwestern Public Service Company which uses 4 million cubic feet daily. Plant expansion now under construction will raise the gas need of this company to 7 million cubic feet daily by July 1, and within the next year or so, depending on availability of equipment, their requirements will increase to 12 million cubic feet daily, providing the gasoline plants are able to guarantee sufficient gas at that time to justify the expansion.

Southwestern Public Service Company's plant is located in the southeast corner of the Wasson field, about 2½ miles distant from the gasoline plants, and the gas is used as boiler fuel to produce steam for electricity in the West Texas and New Mexico area.

Largest consumer of Wasson residue gas is the Columbian Carbon Company which requires 13 to 14 million cubic feet daily. Located near the town of Seagraves about 18 miles from the field, this plant during the war produced critical carbon black from its furnace-type plant, realizing a high percentage of recovery from the residue gas. Carbon black from the plant is currently being used in the manufacture of automobile tires.

Availability of processed gas in the Wasson area is influencing other industries to consider locating plants there, among those negotiating for gas being a newly-formed chemical concern which will use the gas in the manufacture of hydrochloric acid for acidizing oil wells in the West Texas fields. Another potential outlet for large amounts of gas will be available in the future with completion of the gas line of the El Paso Natural Gas Company, which, originating in the Panhandle gas fields, is projected to pass in the vicinity of Wasson.

On a typical minimum day's gas intake which determines the volume of contract gas available, records show little venting of residue gas, with almost the entire output being consumed. Sources of consumption, and the approximate average daily volumes of residue gas received by each, are as follows:

Extraction Loss	3,600,000 cubic feet
Lease Fuel	6,200,000
Plant and Camp Fuel	7,500,000
Southwestern Public Service Company	4,000,000
Columbian Carbon	14,000,000
Flared During Daylight Hours	5,500,000
Total	40,800,000 cubic feet

With the demand for residue gas relatively uniform, venting increases on days and hours of peak production. Elimination of "peak" and "low" days, and "peak" and "low" hours, so increasing the daily assured volume of gas available for the consumer, is the answer to efficient disposal of residue gas. If accomplished, this means complete utilization of all gas with full recovery of its useful properties as a conservation measure.

Dry Hole Knowledge Necessary In Secondary Oil Recovery

By F. R. COZZENS, Equity Oil & Gas Company

WHEN a project is being whipped into shape for secondary oil recovery, the operator is concerned mainly with the number and location of its producing wells. Of equal importance, and sometimes of greater significance from a financial standpoint, is the number and location of its dry holes.

The term "dry hole" must include not only wells in which little or no pay formation was found, but also those ruined by shooting or careless management, and from which the equipment has been removed. One such well can change the course of an entire recovery pattern. Correctly charted, it proves useful as a guidepost in determining the width, area, and marginal irregularities of a body of sand; or to indicate water-logged spots and profile faults through which little or no oil passes. Uncharted, it can waste pressure, aid in the formation of oil traps, and contribute materially in divers other ways to undermine a recovery structure.

Thanks to more rigid mining laws and better cooperation among the oil fraternity, most newly drilled "drys" are now charted and properly plugged so that it is possible to obtain an accurate working survey of almost any district. Such a survey is a necessary step in recovery developments, but the operator who stops with this source of information is generally leaving a gap open for trouble. The most treacherous phase of the dry-hole problem originated back in the wildcating days when no records were kept, and wells were plugged carelessly if plugged at all. We are told on good authority that around 70 percent of these old holes sealed themselves through the natural process of caving. Be that as it may, there would still be approximately 30 percent remaining open to surface water, and seepage from various formations. There is ample evidence in the eastern stripper fields to prove that underground conditions resulting from these old drillings did not improve with the passing years, and like the unloaded gun, disaster struck where least expected. Ignorance of dry hole history has already cost operators thousands of dollars, and there is growing conviction in many districts that a far more rigid action on the problem is necessary if future oil recovery plans are to be successful. Conditions differ as to locality and while there is no specific method which fits all cases, best results have so far been obtained by individual property surveys; dry holes being ferreted out and charted by the operator and his lease crews.

In making the individual survey, the operator first provides himself with a map (preferably scaled) of his property, upon which is marked all established dry holes, and their approximate distance from producers. For convenience, dry hole markings are made in different colors to indicate wells having little or no pay sand; wells ruined in testing; wells abandoned after pumping period; etc. A color key is thus provided for additional information about each well which is kept on file. The next step is a determined search for the unknown "drys" which in many cases means a step by step canvass of suspicious parts of the property, keeping on the alert for ash and cinder piles, sluice deposits, and similar evidence which would indicate an old drilling. Since practically all pioneer drilling was done by steam, ash and cinder deposits are unmistakable evidence that cannot be obliterated by undergrowth or cultivation.

Pitted soil-surface in a suspicious area, and sulphur and oil stains along the banks of nearby streams are also evidence which should not be overlooked. When existence of an old drilling has been definitely established, measurements are made to the nearest producing wells, and its identity is marked, both on the job and on the map. Contour of the land in the immediate area gives some indication as to the extent of surface drainage, but no effort is made to determine the condition of the hole until the entire property has been canvassed. For obvious reasons, many of these pioneer drillings were not subjects for public discussion, and were not always mentioned when properties changed hands, but by using a little tact, an operator can generally find some local resident who knows the story, or can be referred to an authority who does. Oil well supply dealers are good sources for such information, as are farmers who owned the land when the drillings were made. With fragments of evidence obtained from these and other sources, the operator is usually able to piece together a working history of long-forgotten wells.

After the dry hole survey of a property has been completed, and the map checked with the evidence, the operator is apt to get many surprises, and sometimes the outlook is much different than what he expected. That supposedly rich plat, for instance, may be shown to have been punctured by a dry hole or two, and that perfect five-spot recovery pattern he had in mind is perhaps water-logged as evidenced on the map. Disappointed? Yes. But knowledge of an old dry hole has saved the time and cost of drilling a new one. It also happens at times that the history of a dry hole provides the key to productive drilling, and suggests oil recovery possibilities that would otherwise be overlooked.

Digging up the history of long-forgotten wells frequently changes the outlook on a property and usually saves money

Underground conditions resulting from open hole damage manifest themselves soon after recovery measures are started. Close watch is kept on all dry holes, and among the first suspicious signs are gas bubbles in an abandoned well, or the odor of gas in the immediate vicinity. Such evidence proves that the sand is not sealed off, and as pressure accumulates, matters tend to become worse until the well is plugged. By far the most satisfactory plugging work is done with the aid of cleaning out tools, especially a light, portable outfit which can be easily moved and rigged up. After debris has thus been cleared from a well and the pay formation reached, a most effective plug is a steel ball, made for the purpose in a diameter sufficient so that when dropped down the hole it will bed itself firmly in the shoulder at the reducing point (top of pay sand). A barrel or two of "soup" from the sluice-pit, poured down on top completes the job.

In most old wells, however, reducing point measurements are questionable, and in these cases the customary medium is a tapered wooden plug, driven into the sand shoulder, and backed up with cement. Where the pay can not be reached because of iron (pieces of casing) penetration is made by drill until a formation likely to cave is encountered. Into this zone is placed 50 to 100 pounds of high-test dynamite or gelatin, anchored by one to three barrels of water, and exploded electrically. The objective is to close the bore with spoil resulting from the blast. Open wells, partially filled with water are sometimes plugged to good advantage by agitating the fluid with the tools for an hour or so, after which, the hole is bailed dry. Removal of the water column generally encourages cavings from the side-walls in amounts sufficient to seal off the hole. Where cleaning out tools are not available, a fair degree of success in plugging is being accomplished by pouring down an open well a quantity of mortar, composed of three parts sand to one part cement. Five hundred to 1000 pounds of mortar are generally used, depending upon the diameter of the well-bore, and the depth that can be reached. Some operators report good results from the use of finely pulverized clay, in quantities ranging from 1000 to 2000 pounds. Pluggings of asbestos fiber and tar have also been used successfully, especially in lo-

■ CONTINUED ON PAGE 50

Operation and Cost Of an Engineering Cooperative

D. V. CARTER, in his paper, "The Function and Use of Petroleum Engineering Committees," comprehensively covered the history, organization, scope of activities, and legal aspects of engineering coperatives. He left me to answer, however, that first and $64 question inevitably asked by the brass—How much does it cost and why?

Although I would like to give you the answer to the last half of the question first, it won't be asked that way. So, the normal cost to operator-members for operation of the Mississippi Oil and Gas Engineering Committee is approximately 2 mills per barrel of oil and condensate produced. The average cost per well is $4.75 per month or 15 cents per well per day—and that is a deductible item.

By ALEC M. CROWELL
Jackson, Mississippi

A GROUP of cooperative and progressive oil and and gas operators in Mississippi have proved that the most common complaint of the older oil and gas producing states—"lack of requisite data prevented the evaluation of petroleum reservoir behavior"—can be averted simply and inexpensively.

At an average cost of $4.75 per well per month an engineering cooperative representing 75 percent of the wells and 68 percent of the production of oil and gas in Mississippi has brought an understanding, not only between operators but also between state and operator, that is unique in the history of the petroleum industry.

Continuous pool studies reflecting the complete physical aspects of each oil and gas reservoir of Mississippi make possible an evaluation of economic conditions that is always current. Cooperative service has lightened the burden of the technical staffs of its operator-members with resulting economies.

Unlike the first cooperative formed some 20 years ago, the work of the Mississippi committee is confined to a geological, statistical and factual-engineering program. No agreement or understanding, expressed or implied, with respect to the exploratory and development policy to be pursued, exists between members, and no restrictions are placed on competition in oil and gas operations.

This statewide petroleum engineering committee has proved advantages over the individual field engineering committee wherein membership is confined to actual operating interests. Conservation of oil and gas, rapid acceptance and assimilation of good operating practice and systems is being brought about at a cost of only 1/5 cent per barrel of oil and condensate produced. And this cost is deductible from state and federal income tax.

Seventy-five percent of the oil and gas wells and 68 percent of the production of oil and condensate in Mississippi are represented by membership in the cooperative.

The Mississippi committee has been in operation only 13 months; however, expenses for the first 12 months of operation are normal for such groups. A tabulation setting out the distribution of expense for the first year follows:

Expense Distribution for First Year

Disbursement Items.	% of Total
Salaries	30%
*Bank Loan to meet initial expense	10
Automobiles	9
Publishing Monthly and Quarterly Reports	8
Scientific Equipment—Field	7
Office Equipment	6
Field Travel Expense	5
Auto Repair and Expense	3
Administrative Expense—Office	3
Rent & Utilities	3
Professional Services—Extra Help	3
Electric Logs & Drafting Supplies	2
Telephone & Telegraph	2
Postage & Mailing Service	1
†Miscellaneous Service & Supplies	8

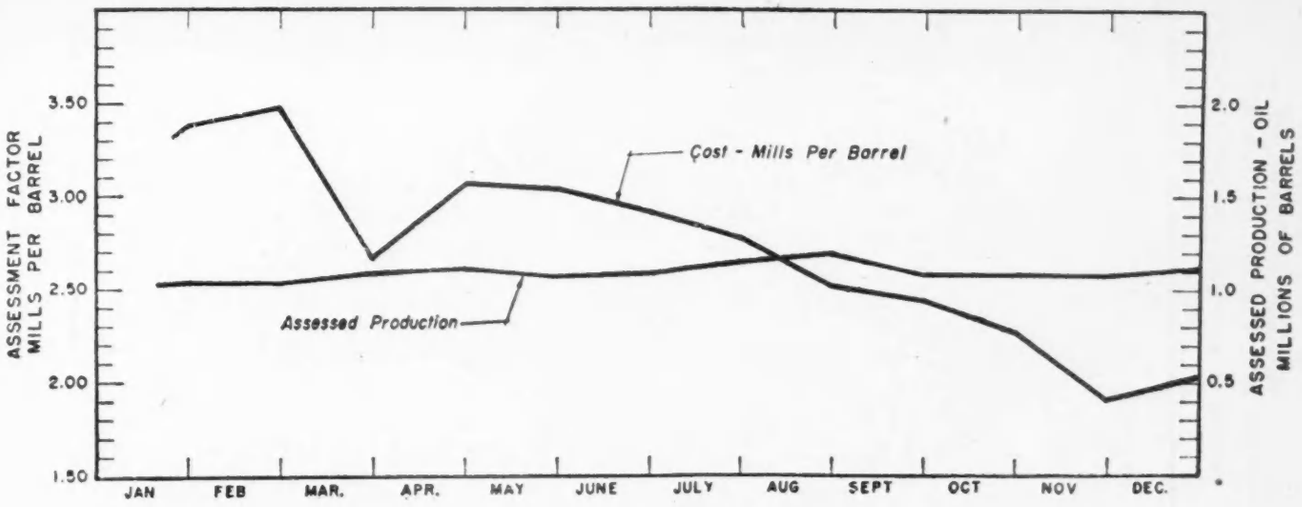
* Absorbed by monthly payments.
† Dues and Subscriptions, Printing and Stationery, Repairs to Scientific Equipment, Interest on Loan, Maps, Insurance, Janitor Service. Federal Old Age Benefit Tax, Licenses and Taxes, Repairs to Office Equipment, etc.

You will observe a very interesting fact from the accompanying chart depicting the production of oil and condensate assessed and the assessment factor for each month. The assessed production of the member operators increased approximately 10 percent over the calendar year 1945 while the operating cost was reduced by more than half—from 4.92 mills per barrel in February to 2.01 mills in December.

At the initial meeting of the policy group of the committee I was told that the first and only objective of the cooperative was to gather factual field data covering such a range that recovery efficiency in the petroleum reservoirs of Mississippi might be evaluated. The work was to be confined to physical aspects in the belief that an understanding of the physical behavior of the oil and gas reservoirs of Mississippi was of first importance and prerequisite to evaluation of economic conditions.

This was a large order, and now that the assignment has been successfully carried out I can confess that at first I felt that it was impractical. Reason was that it was during time of war and the technical staffs of the various companies were busy; the data needed were considered by some companies to be private

(From an address before a joint meeting of the Illinois Society of Petroleum Engineers and the Illinois Basin Chapter of the American Petroleum Institute. Mt. Vernon, Ill., March 1, 1946.)



information; work of this nature in the past had been done by individual field committees wherein membership was confined to actual operating interest; and I could not see that the conservation of oil and gas would be furthered by the committee plan. I was wrong on all counts.

From the beginning it became apparent to the member-operators that by utilizing the services offered by the committee the burden on their technical staffs could be lightened with resulting economies. The information placed in the reports, although information still regarded as private by some, is requisite data for dependable analyses of field behavior and has lead to a better understanding not only between operators but also between the State of Mississippi and the oil and gas operator. Further, Mississippi is moving rapidly forward into the realm of good conservation practices and each step has been made through the facilities of the Engineering Committee.

Policy Group Program

The broad program outlined by the policy group contemplated information that can be divided into five general groups:

1. Reasonably accurate data on gas, oil, condensate and water production for each reservoir and each lease within each reservoir.
2. Sub-surface pressure surveys for correlation with production data.
3. Productivity indices on a reasonable number of wells in each reservoir.
4. Analyses of sub-surface samples of the reservoir fluids of each reservoir.
5. Geological aspects and structural data on each reservoir.

The information is essential to reservoir studies and has been gathered. The reports of the Committee make the data continuous and current and the cost of gathering the information is insignificant in comparison with the benefits stemming therefrom.

The Committee's most recent engineering-geological and statistical report, now being distributed to members as Factual Data No. 13, contains for each oil and gas reservoir in the state of Mississippi the data outlined above. For instance, on Page 49 of this report there is a development map on the Pickens Field of Madison and Yazoo counties, and on Page 50 there is a contour map on the Wilburn sand reservoir of this field and also a cross section on the same productive horizon.

On Page 51, the page carrying the reservoir behavior chart here reproduced, there are certain basic reservoir data. These data include field location, type of structure, name of the producing formation, ownership and discovery date of the discovery well and the current spacing pattern for the field. There are also set out the average elevation of the wells in the field, original water level, current water level, top of effective porosity, total effective section, bottom hole temperature, average porosity and permeability. Further, the values are given for connate water, formation volume factor, an estimated recovery factor, gravity of oil and gas, gallons per thousand of gas, original and current operating gas-oil ratio, and the original and current reservoir pressure at a fixed datum plane.

Beneath the basic reservoir data section is the reservoir performance chart hereon shown and below that are the pool behavior statistics.

Each issue of the report sets out under the heading "Pool Behavior Statistics" for the current 12 months' period (by months) the number of producing wells, assigned acreage, reservoir pressure (interpolated to the last day of each month), the monthly production of oil, water and gas and the cumulative production of oil, water and gas.

The mechanics of gathering this information have been pretty well worked during the past year. The development maps and reservoir performance charts are drawn by the Committee's draftsman and the information placed on the maps and charts comes from the State Conservation Department, operator members and field tests made by the Committee's own engineering staff.

Individual ledgers for each field on the production of oil, condensate, gas and water are kept in the offices of the Committee for the use of its members. These production ledgers are subdivided, a section being devoted to the individual well and the individual lease in each reservoir. At the end of each month, from the data contained in these ledgers, is calculated the reservoir voidage represented by the production of oil, gas and water from each reservoir. Results of this calculation, expressed as reservoir voidage in barrels per well per day, are posted on a reservoir performance chart.

Voidage Curve

You will observe on the reservoir performance chart for the Pickens Oil Field this reservoir voidage curve. The relationship of the bottom hole pressure and voidage curve is the controlling factor in an evaluation of the current performance of the Pickens Oil Field.

Of all the data collected by the Mississippi Committee the most difficult has been the collection of reasonably accurate information on the production of water. This for the reason that water, unlike oil and gas, has no intrinsic value. There is no incentive to measure oil field water except in particular cases.

Over the past year the engineers of the Committee have worked with the switchers and pumpers in the field, particularly those employed by the small operator. The engineers have shown these field men the use to which the information is put.

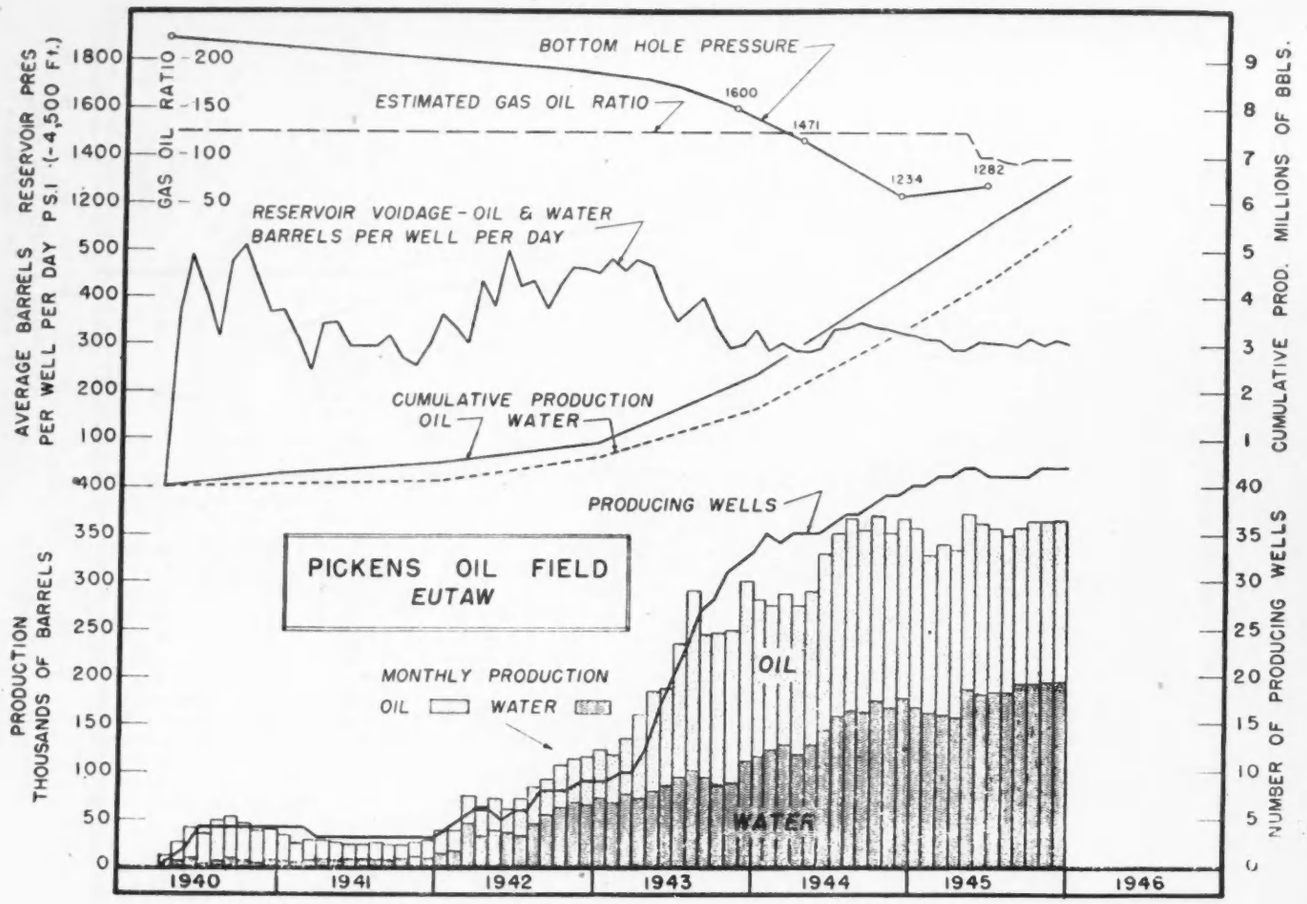
Cooperation between the field employes of most oil and gas operators and the Committee engineers is excellent. A record of oil, condensate, gas and water production—beginning with its inception—on every oil and gas well in the state of Mississippi is now the property of the Committee.

The facilities of the Mississippi Cooperative are now complete. Equipment needed for the gauging of reservoir pressures, the measurement of natural gas and water, and a field laboratory for the calibration of these instruments are in operation. The office equipment includes, among other things, a drafting room, calculator, adding machine and a bookkeeping and accounting system set up by a certified public accountant.

The personnel of the Committee is seasoned and experienced. The senior petroleum engineer has a background of ten years and the junior petroleum engineer two years' field engineering experience. The draftsman works part time, being regularly employed by one of the larger oil companies.

The secretarial staff was selected after a careful search. No training was necessary as the staff is thoroughly familiar with geological and petroleum engineering work. This fact enabled the Committee to get under way rapidly.

The production of oil and gas in Mississippi at this time is not of great magnitude when compared with production in your state (Illinois). The development of the oil and gas producing industry within the state may be said to be in its infancy, but the discoveries



to date and the magnitude of current exploratory effort clearly indicate that the production of oil and gas in Mississippi is destined to be of major importance not only to Mississippi but also to the country as a whole.

Although oil was discovered in Mississippi only six years ago a wide range of oil and sand conditions is represented by the 23 reservoirs now under study. There are many variations in recovery mechanisms, extending from fields produced by wide open flow to fields operating under voluntary restricted rates of withdrawal. Oil and condensate gravity among the fields range from 14 to 68 gravity. The well spacing patterns are fixed at 40 acres for oil wells and 320 acres for gas or condensate wells under the state's state-wide spacing rule. There are few exceptions to this spacing rule.

The common complaint of older oil and gas producing states that lack of requisite data prevented the evaluation of reservoir behavior cannot happen to Mississippi so long as the Engineering Cooperative functions. Through the facilities of the Committee, pool studies are continuous and provide an unusual amount of field data on the oil and gas recovery process. The first year of operation has seen a substantial advance toward fulfilment of the fundamental objective of the policy committee.

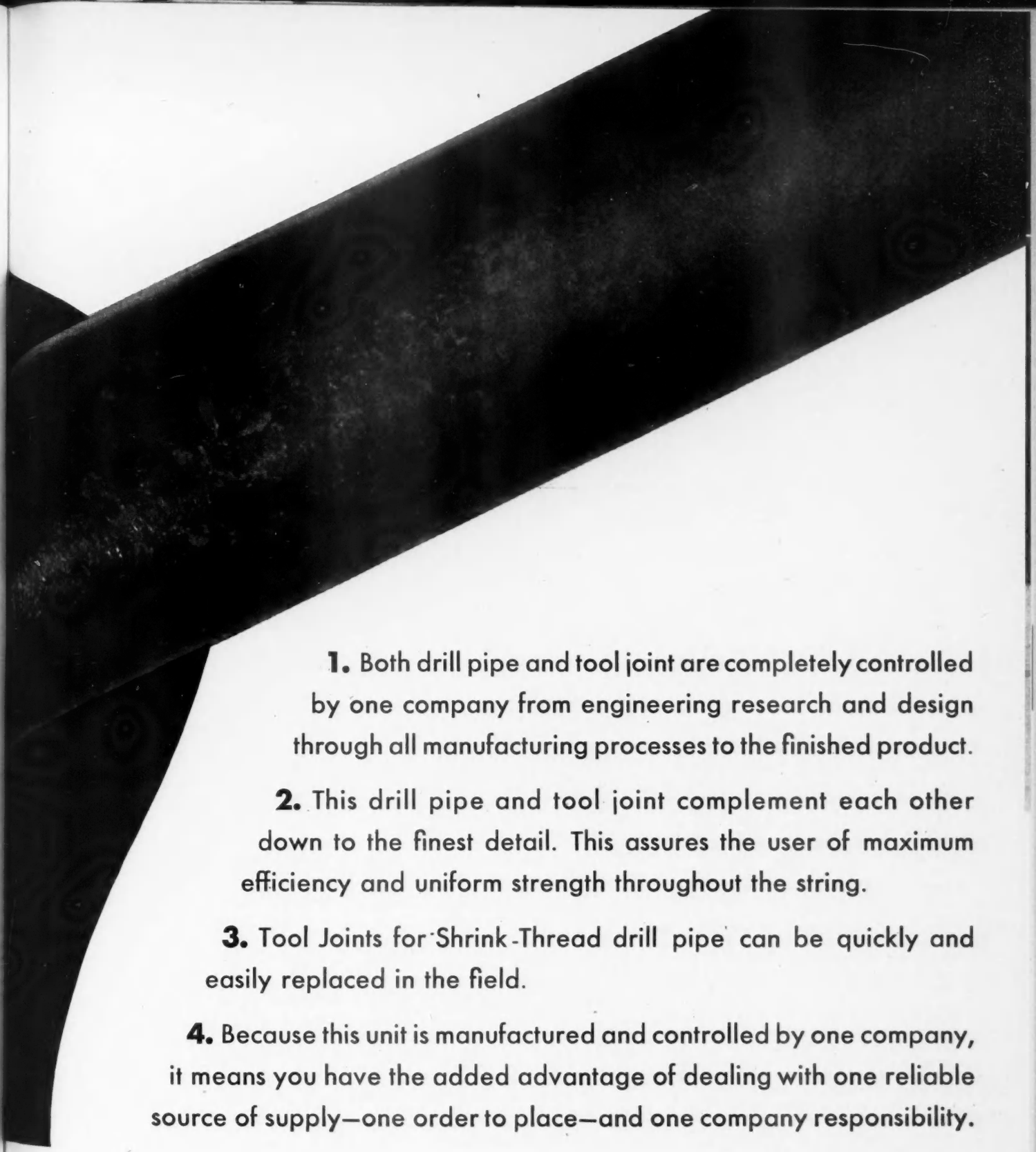
Dry Hole Knowledge

■ CONTINUED FROM PAGE 47

calities where gypsum and salt deposits are encountered. Regardless of the methods used, the tops of all abandoned wells should be firmly tamped with cement or clay to retard surface seepage.

Effective plugging of an abandoned well stops waste of pressure and prevents drainage into the well, but it does not eradicate reservoirs of water which may have accumulated in the sand over a course of years. Nor does it prevent water from being forced up from below, as is often the case in regions where salt water is prevalent. Fortunately, water, unless under artificial pressure, is slow to act on the average oil-bearing formation, and seldom is the sand penetrated for any great distance. Its effects do not usually show up until recovery measures have been in progress for some time, but much can be learned from the behavior of producing wells. Sudden fluctuations in production, appearance of slimy oil, obnoxious odor, etc., are all indicative signs of nearby water. If, upon noting such evidence, the operator keeps in mind that oil can not be forced through a water zone, he will cease his efforts to build up a uniform pressure in that immediate area. Instead, he will regulate the intake valves on nearby inputs so that the driving force (air or gas) can be pressured in from one general direction, thus forcing oil around the water zone instead of against it. Later, pressure-strength is reversed on the inputs so that force is applied from the opposite direction. As water settles naturally into the lowest and most porous sections of sand, much of the oil which the water replaces rises above it. If input wells are provided with packers so that special force can be directed into the upper sections of sand, most of this oil can be forced over top of the water zone and into range of pumping wells. When water zones from abandoned wells are located along the margins of a sand it is generally found advisable to maintain greater pressure on the input nearest the water zone than on any other part of the project; the objective being to force marginal oil into more accessible areas. Unbalancing of pressures in the vicinity of water zones tends to work out recoverable oil and aids in keeping the zone localized. If, in connection with his survey of previous drillings the operator will record his experience with water zones resulting from abandoned wells along with his progress in sealing those wells he will be writing the answers to innumerable other problems which invariably bob up as operations continue.

With postwar production measures now being introduced into practically every district, the need was never greater than at present for more adequate knowledge of abandoned wells. Hundreds of independent operators, whose holdings were considered too small for recognized recovery efforts are coming into the picture through cooperative action, research, and new production methods especially fitted to their needs. Many properties will be redrilled, pumping wells reconditioned, patterns set up, etc.; and this work must be governed to great extent by wells previously drilled and abandoned. The history of these old drillings is just as important as the record of present producers. One is incomplete without the other, and both lead the operator towards his rightful share of recoverable oil.



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Let's Develop AMERICAN OIL

By J. T. PADDLEFORD, Consulting Geologist, Hutchinson, Kansas

A CAMPAIGN of misinformation directed by some government officials and endorsed by certain executives in the oil industry has been under way for some time, aimed at creating the erroneous impression that this country is on the verge of running out of oil. In an article carried by a leading national magazine the author pointed out that this country, after suppling 77 percent of wartime oil demands, has now only 17 percent of the world's known oil reserves. However true, this statement need cause no alarm nor should it stampede our government or individual oil companies to enter into a mad scramble for the remaining 83 percent of the known world reserve which are outside the continental United States.

During his career as a geologist, the writer has heard the cry of imminent oil famine at least twice and it probably has recurred many times before in periodic cycles. The same hue and cry was raised during World War I when, if the facts were known, this country furnished a much greater percentage of the oil required by our own war machine and that of our Allies, than it furnished during the recent conflict. It should be pointed out that World War I was the stimulus behind some of this country's greatest oil discoveries while, on the other hand, no new large oil finds have been made during the recent hostilities.

The failure to find new oil reserves is not due to a lack of such reserves. This point was clearly brought out in a recent address by Vincent C. Illing, professor of geology, Imperial College of Mines and Technology, London, England, who said:

"It is not always realized by American geologists how generously they have been treated (in respect to the vast amounts of favorable sedimentary stratigraphy represented in the United States). The lack of success in finding oil more generally in Europe is not entirely due to an absence of effort; it is because in most areas the prospects assessed on sound geological principles are poor. One could with equal justice assert that large areas of the United States have not been adequately drilled and that when they are so, their value will be found to be as great as the areas already developed. This may be partially true, in which case the future prospects of discovery of oil in the United States are very rosy indeed, for there are vast areas of sedimentation on the American continent which are practically untested."

Why have no important oil strikes been made during this war? Is it because we are short of favorable prospecting areas? Obviously this is not so, judging from the studied opinion of the eminent geologist just quoted who assures us that we have "vast areas of sedimentation on the American continent which are practically untested."

Reasons for Shrinkage

The shrinkage of American oil reserves can more definitely be attributed to the complete indifference of our government to the requirements of the oil operator, the ridiculous governmental controls which have hampered his operations. The government either through short-sightedness or plain ignorance has caused the wildcatter to give up, as there has been no incentive to drill wells no matter how patriotic he might feel. The price fixing of crude in view of skyrocketing of prices on other commodities has caused many an independent to fold up or sell what he has to a major company. With renegotiation as a weapon, government could easily take excess profits from operators if government thought it expedient. If oil had been allowed to go to $2.50 per barrel, I dare say, Saudi Arabia would have looked like a small East Texas in comparison to new discoveries in this country.

There is no oil shortage in the United States. We have the reserves; all we lack is development. With all of the areas yet untested in the United States I believe it is preposterous to state that we have no reserves. Any state of the Union that is endowed with sedimentary beds is a possible oil reserve. Known reserves are only areas in which the drill has penetrated and encountered oil. To bring home this point we need but mention a few areas that have been practically untouched by the drill, such as Central and Western Nebraska, Eastern Colorado, Western Kansas, Western Oklahoma, Western South Dakota, all of Arizona, Utah, Idaho, Eastern Oregon and Washington and, until just recently, the potentialities of Mississippi, Alabama and Florida of which, as a matter of fact, little is yet known. All of the above areas are richly endowed with sedimentary stratigraphy which may easily yield fields of greater potentialities than any yet discovered.

An industry unshackled by government controls and fairly rewarded for its efforts will prove there is no oil dearth

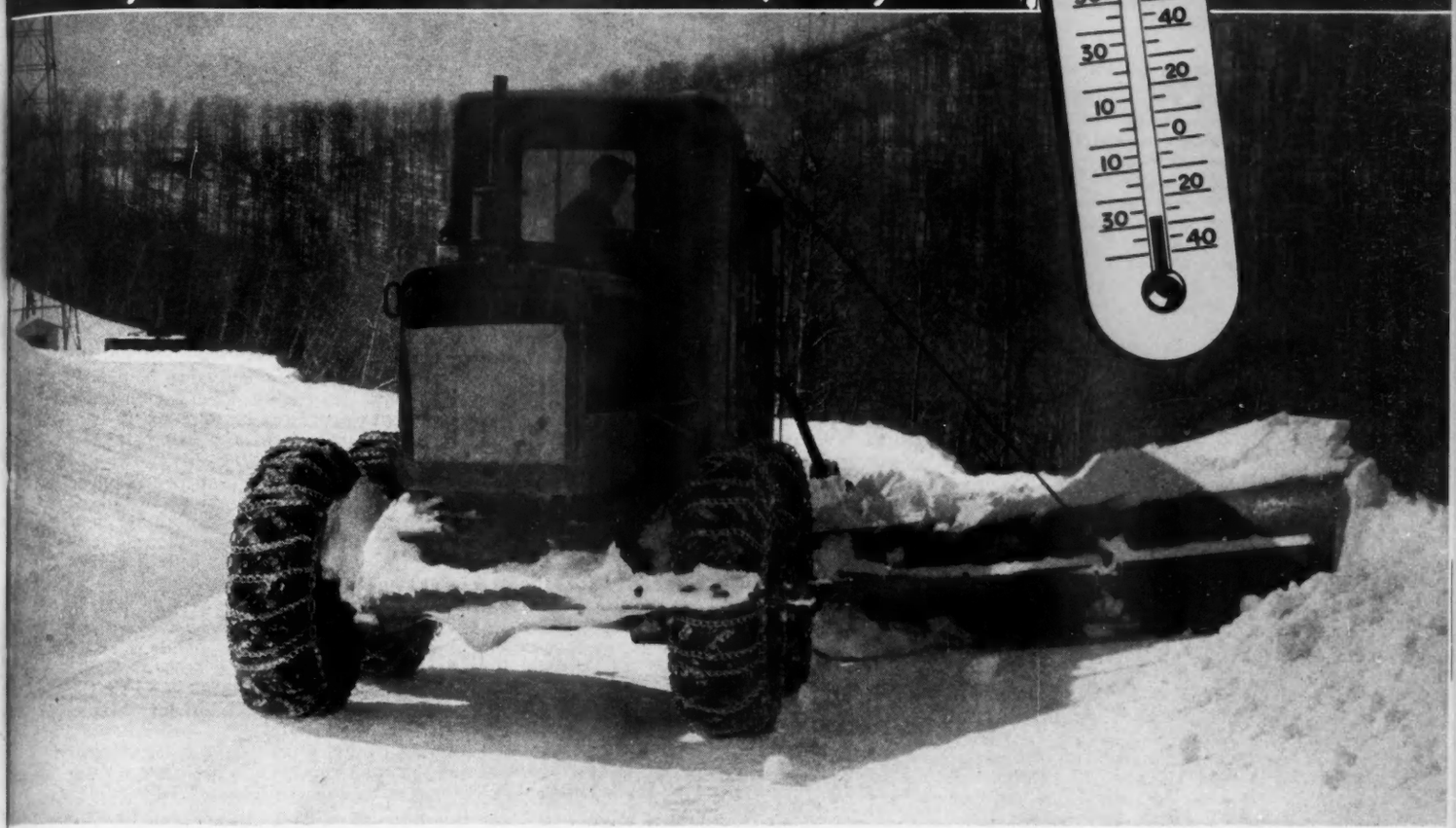
With due respect to our various methods of exploration, namely: surface geology, subsurface geology, gravity meter, torsion balance, magnetometer, seismograph, soil analysis, etc., these are only tools which we use to find likely anomalies on which to drill. In the end it is the bit that finds the oil and that means development. Development does not take place by the hoarding of leases as is the common practice of major companies. Development takes place when the pioneering spirit of the individual is challenged and a just return is assured for the gamble he takes.

A policy which restricts national oil development and encourages the importation of foreign crude will have ruinous effects on the initiative and aggressiveness of the independent operator who, in the long run, is the backbone of the oil industry. To set aside potential reserves but not to drill them is equally bad business. Had we followed such a course prior to World War II it is certain we would have been unable to supply the vast demands made upon us. It was because we were prepared to meet those demands from fields discovered and developed that we were able to supply the 77 percent of the crude needed to keep our war machine moving at top speed.

It may appear to be good international politics to make oil agreements, acquire concessions and other rights to foreign oil, but is it not possible that in the pursuit of this policy we may be sowing the seeds for future wars? Why should we scramble madly for the other fellow's oil when we have such vast, potential oil reserves still untapped in our own country?

I can see no difference in the hypothsis that Russia, Britain or France should not be allowed to exploit Texas or California through concessions as we should have a right to exploit any area within their zone of influence. If we pursue this foreign oil policy our allies of yesterday may easily become our enemies of tomorrow. Sentimentality has no place in economic warfare. Secret trade agreement and power politics breed trouble. If enough effort was used to develop areas within the United States and Canada our static oil reserve picture would soon change. Concessions from foreign governments are only as good as their intent or as good as the threat by armed might to enforce them. Had it not been for complacency on

BUCKING THE WEATHER AT WILSON CREEK



"Caterpillar" Diesel No. 12 Motor Grader clearing roads of snow on Wilson Creek Lease, jointly operated by the Texas Co. and the California Co.

Water for camps and shops is supplied by a "Caterpillar" Diesel D8800 Engine driving a Gardner-Denver pump.

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the part of the American public, Mexico would never have gotten away with the expropriation of American oil rights. Surely, we as victors in this present war will certainly have the armed might to enforce any treaties we negotiate. If we are to underestimate our own oil possibilities we surely will be forced to become embroiled in the old game of economic warfare which in the end leads to armed conflict.

Reserves on Paper

In connection with the possibilities of developing new reserves within our own borders the writer would like to make some pertinent observations. At present the major oil companies are doing a great deal of exploratory work and leasing vast amounts of acreage. The areas leased show positive anomalies as to feasible structural and oil trapping conditions for future development. The methods of exploration are numerous, each type particularly suited to a locality. The acreage is usually leased for a long term. Development of this leased acreage does not usually follow immediately on the heels of exploration. As a result we have a possible new oil reserve setup on books by the companies. In reality, however, the possible oil reserve is an unknown quantity. The property still has to be drilled before anything tangible is apparent.

The independent operator is in no position to encumber himself with long periods of lease rental payment and would rather drill a test well and find out something concrete. Only in this manner can new oil reserve be discovered. Adequate remuneration for the independent's trouble has been his only incentive plus a will to accomplish and pioneer.

While recognizing the importance of the world's oil reserves, the American oil man has no reason to experience an inferiority complex and the American people need not fear an imminent oil famine. This broad country offers ample opportunity to the oil operator if he's given half a chance. Let governmental restrictions be relaxed; let the price of crude be commensurate with the prices of other commodities; give scope to the talents and the energy of the wildcatter and he will find sufficient oil to make the country independent of foreign sources for many years to come. In effect, let's dig in our own back yard and not be lured away by far pastures which look greener than those closer to home.

Dual Completions Hearing

The Texas Railroad Commission on April 23, at Austin will take up the application of United Producing Company to rescind a commission order forbidding dual completions in the Bonnie View field, Refugio County. United will try to prove that if the wells are handled properly, there will be no serious hazard, as claimed at a recent hearing.

Research Plant Planned

Standard Oil Company (Ohio) has acquired an 84-acre tract in Warrensville Heights, Ohio, for a proposed technical center, according to G. W. Hanneken, vice president. A large research and development laboratory will be included in the construction program, which is to get under way next year.

Tax Review

A Regular Feature of THE OIL WEEKLY

By WILLIAM O. TAYLOR*

New Ruling Denies Capital Gain Treatment of Certain Oil Payment Sales:

The government recently issued a ruling, G.C.M. 24849, which, if it is upheld, is going to upset some apple-carts. It deals with the tax consequences of the sale of short term oil payments. A typical example is where A, the owner of producing leases from which he derives net income of $150,000 per year (before deducting depletion), sells to B an oil payment of $300,000 payable out of 90 percent of the production from his leases. Ten percent is retained by A to cover current operating expenses. A receives $275,000 in cash for the oil payment sold, which will pay out in about two years.

If, instead of selling the oil payment, A had produced the oil for his own account, his total income tax for the two years (at 1944 and 1945 rates) would have been about $179,000. The purpose of selling the oil payment was to get the benefit of the capital gain provision, whereby (it was thought) the tax would be limited to 25 percent of $275,000, or $68,750. Thus, the net saving due to sale of the oil payment (taking into account the $25,000 discount at which the oil payment was sold) would be about $85,000.

According to G.C.M. 24289, A is not entitled to the capital gain treatment with respect to the $275,000 which he receives from B, but must treat it as ordinary income, subject to depletion but taxable under the usual normal and surtax rates. A's income tax will amount to about $162,000 and, taking into account the discount at which the oil payment was sold, he will come out about $10,000 poorer than if he had not sold the oil payment.

Litigation Expected

Until G.C.M. 24289 came out, there was good reason to believe that the seller of an oil payment as outlined above would be entitled to the capital gains treatment. No ruling to that effect had been issued, but the policy of the government had apparently been to allow it. From well established principles it may be argued with considerable force that such treatment is correct.

The principal ground on which the government relies in G.C.M. 24849 is that the sale of a short-term oil payment (the ruling states that they ordinarily pay out in one or two years) is, in effect, no more than an assignment of the income to be derived from the property. One of the earliest instances in which this doctrine was relied on to tax incomes to someone other than the owner involved cases where the owners of bonds clipped the interest coupons prior to maturity and gave them to members of their family, who were the owners at the time the coupons matured and were paid. Court decisions upholding the government's contention that the donors were taxable on the interest say, in effect, that the fruit cannot be attributed to a different tree than that on which it grew. Doubtless, the new rule will be litigated, inasmuch as there will certainly be very considerable tax deficiencies assessed on account of it.

The rule is expressly limited to "short-lived" oil payments, but covers such an oil payment regardless of whether it is carved out of a working interest, a royalty interest, or a larger oil payment. It is not applicable to a situation where the owner of an oil payment sells it in its entirety, nor does it necessarily have any bearing on a case where the owner of a working interest sells it and reserves an oil payment.

Lifting Costs

One of the most interesting ideas expressed in the ruling has to do with the question of lifting costs. It is stated that if the seller of an oil payment were entitled to the capital gains treatment, he would compute his gain by deducting from the cash received by him not only his cost of the oil in place which he sold but also "the estimated cost to him of producing the oil involved in the oil payment right—an obligation he assumes without further cost to the assignee."

This is apparently the first time that a published ruling has suggested that lifting costs are to be treated in any other way than as deductible expenses of the one who incurs them. If it would be reasonable to treat them as suggested above in the ruling, it is no less reasonable to do so if the owner of a working interest sells an over-riding royalty interest. And if estimated lifting costs are allowed as deductions in computing gain on the sale of an over-riding royalty interest, they certainly will not be allowed as a current deduction when actually incurred.

Cost Depletion

What is more alarming is that, by the same line of reasoning, a lessee may be deemed to pay out one-eighth of his lifting costs to raise the lessor's share of the oil and, since this is an obligation he assumed when the lease was taken, it may be argued that, to the extent of one-eighth of such costs (or whatever fraction the royalty is), they represent cost of acquiring the lease and are deductible, not as operating expenses but as cost depletion. This treatment in most instances would not increase allowable depletion, since percentage depletion is usually the controlling amount. The idea will bear watching.

* The author is a member of the law firm of Butler, Binion, Rice & Cook, Houston.

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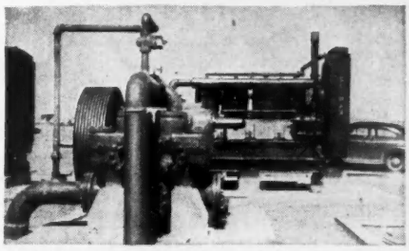

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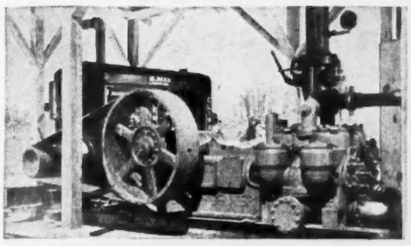
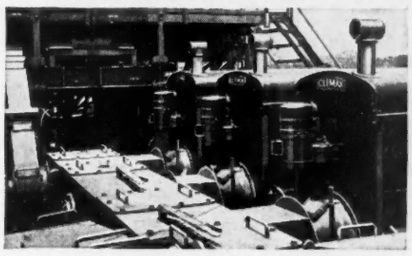
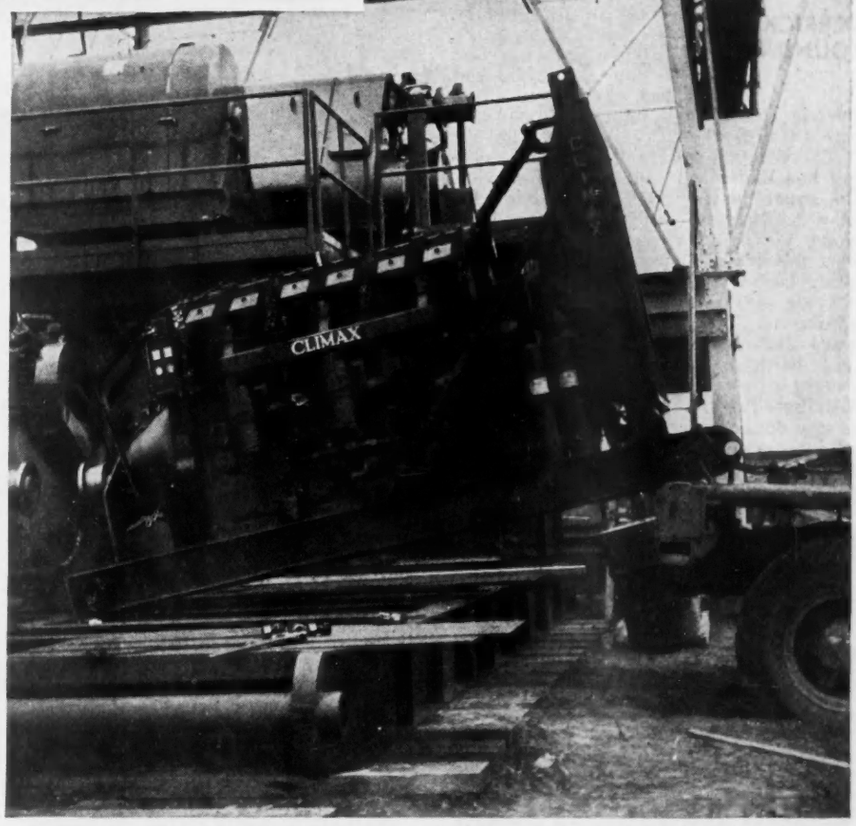


CLIMAX R6I Engine Driving Slush Pump



3 Husky CLIMAX R6I's On Drilling Rig



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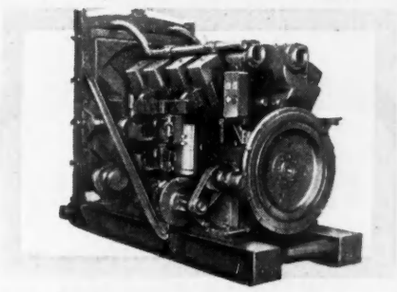
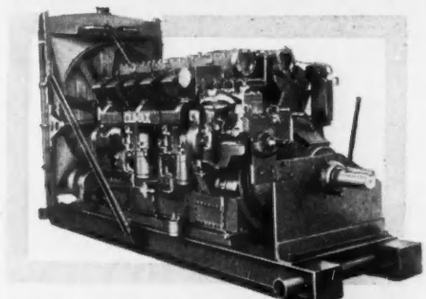


NEW COMPACT CLIMAX VU-280 rated 280 h.p. at 1100 r.p.m. with radiator, fan and auxiliary equipment. 8 cylinder, 4-cycle "V" type, 60°



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DRILLING HINTS

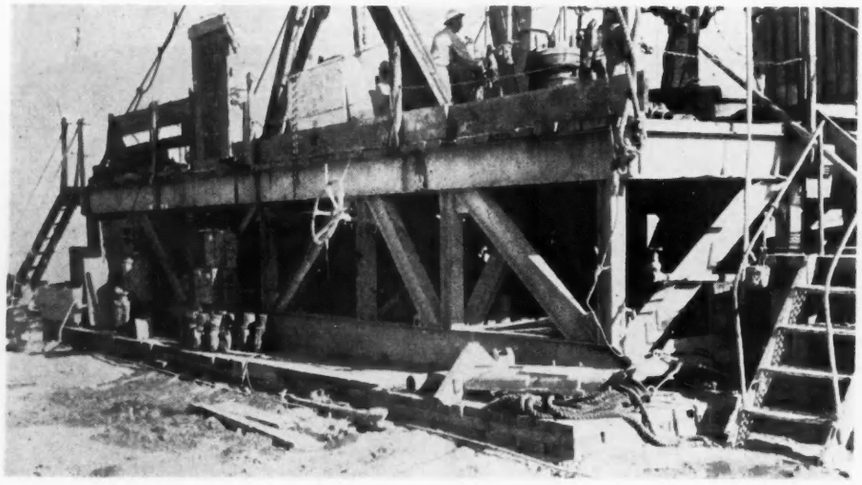
Prefabricated Timber Mats Replace Concrete Piers for Light Rig Set-Up

DERRICK FOUNDATIONS

An improved type of footing particularly suitable for small rigs drilling shallow wells consists of a number of square pads made of triple layers of heavy 3x12-inch lumber. Following the levelling-off of the location by graders, the pads, measuring some eight feet square, are laid out on the ground and the rig skid-base mounted units placed directly atop them.

The company using this type of footing has had exceptionally good service, the square units being light enough for easy loading on trucks between locations, yet being strong enough to support the drilling equipment. The boards being laid at right angles to each other provide an unusually rigid structure similar to that of plywood, and do not warp during the rainy season. Little or no shifting of the pads is detected since weight of the rig structures is evenly distributed over the surface. Elimination of any concrete footings makes this type of footing especially desirable on low-cost wells which will not later be equipped with pumping derrick.

The unitized timber mats are readily picked up with the truck winch and may be hosed down and used on the next location without change.



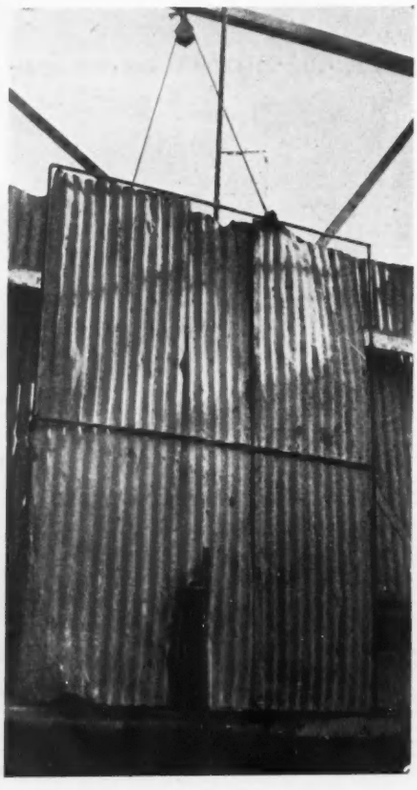
Adjustable Shield Protects Driller from Wind and Sun

DRILLING CONDITIONS

Of great aid to the driller who is unable to step aside to shield himself from brilliant sunlight or driving rain, the adjustable overhead shield devised by one driller is both practical and inexpensive to construct. Three sections of corrugated iron were laid side by side and ringed by an all-welded framework of sucker rod material.

Hinged to the rig structure directly overhead, the shield is raised or lowered by a line attached to its outer end and run up over a small sheave. In order to permit free movement of the of the cat-line, a slot is provided in the frame-work as shown, so that at whatever position the shield may happen to be in, the line will have free movement.

When the well is completed and swabbing or other "wet" operations are under way, lowering of the shield will greatly facilitate the driller's work, permitting him to look up into the rig without exposing himself to oil and mud spray.



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This is one of the complete line of Penberthy gages that meet every liquid level gage requirement.

See Pages 2450 to 2455, Composite Catalog.

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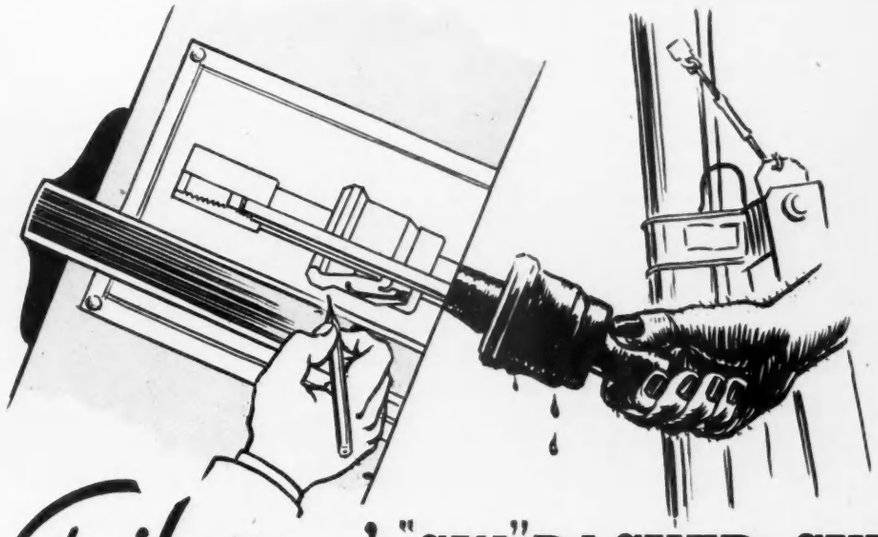
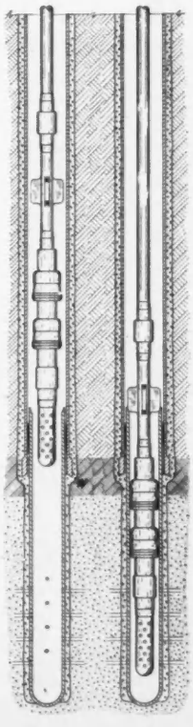


Guiberson's "GW" PACKER CUP

The Guiberson "GW" Packer Cup provides a universal packing element which is adaptable to a multitude of oil field tools and uses such as:

WELL TESTING TOOLS
CEMENTING TOOLS
ACIDIZING TOOLS
PERFORATION CLEANERS
PRODUCTION PACKERS
LINER PACKERS
SPECIAL AND HEAVY-DUTY SWABS
SAND PUMP PISTONS

Built on the tested and proved basket-type principle, the "GW" Packer Cup is molded of special oil-resistant compound and reinforced with a cage of "hairpin" wires interlocked to a metal bushing. The cups are run in the well oversize and maintain a tight fit with casing wall. The wire cage and metal bushing provide the strength necessary to seal and hold high pressures. The greater the differential pressure across the cup, the tighter the seal.



A B

Many uses for these cups will suggest themselves to the field man. Where a cup-type packer assembly is desired, the Guiberson 2-cup "GW" Packer provides a simplified, dependable tool. Equipped with a mandrel of seamless tubing, it has no locking device to be fouled by mud, shale or sand, and does not require tubing weight to set. It packs off equally well at 100 feet or 10,000 feet.

In the sketch *A*, a packer using two "GW" cups is being run in. Note the fluid passage around the packer before it enters the liner. *B* shows the packer sealing in top of the liner with the tubing supported by a wing coupling.

Guiberson "GW" Packer Cups are available with or without thimbles for tubing and casing from 2" to 9⅝"

GUIBERSON
2-cup "GW" Packer

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You can Reduce the Danger of Cementing Failure by always specifying and using

BAKER
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Wash-Down
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Float Shoes

★ Floats the casing safely down the hole.

★ Whirls the cement *all around* the casing.

★ Drills out easily and safely.

Panels of Corrugated Metal Provide Floor Enclosure

A method of unitizing weather shield paneling which encircles the derrick floor of drilling rigs consists of setting up pre-fabricated, measured panels along each side and locking them in place along the upper edges with a longitudinal bar. As shown, the individual panels are made up of galvanized iron corrugated sheeting fastened to pipe framework and the several sections stood up in sockets along the edge of the rig floor. Similar pipe sockets are provided in the upper edges, pins welded at intervals along the lower edge of the overhead retaining bar being made to fit into their respective sockets in the paneling. Doorways are provided in several of the panels. Locking of the paneling at rig corners is accomplished by bolting a short piece of angle iron to brackets at the retaining bar ends, the angle iron spanning the angle between the juncture of the paneling.

FLOOR ENCLOSURES

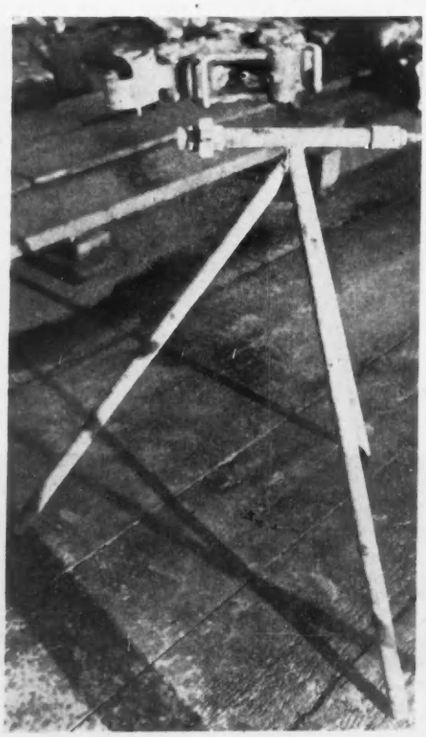
Assembling and disassembling takes much less time than loose sheets.

Tripod Mounting for Playing Water on Kelly Bushing

Whenever fast rotary speeds are employed, free falling of the kelly through the bushing is facilitated by the constant swabbing of oil, dope or water at the stem just above the bushing. To eliminate need for constant personal attention to this phase of the work, one company built up a small tripod-mounted device to which a water hose may be attached, and which will direct a small stream of water to the desired point on the kelly. It is made of small pipe fittings welded to the top of the three pipe legs, the nozzle being bushed down to ¼-inch size, with hose fittings on the opposite end of the quick-attaching uniontype. The device uses very little water and is more satisfactory than the commonly used system of placing a rubber hose on a horse beside the table.

KELLY LUBRICATION

Taking up little room, the tripod may be easily lifted and placed to one side when the floor must be cleared for the addition of more drill pipe to the string.



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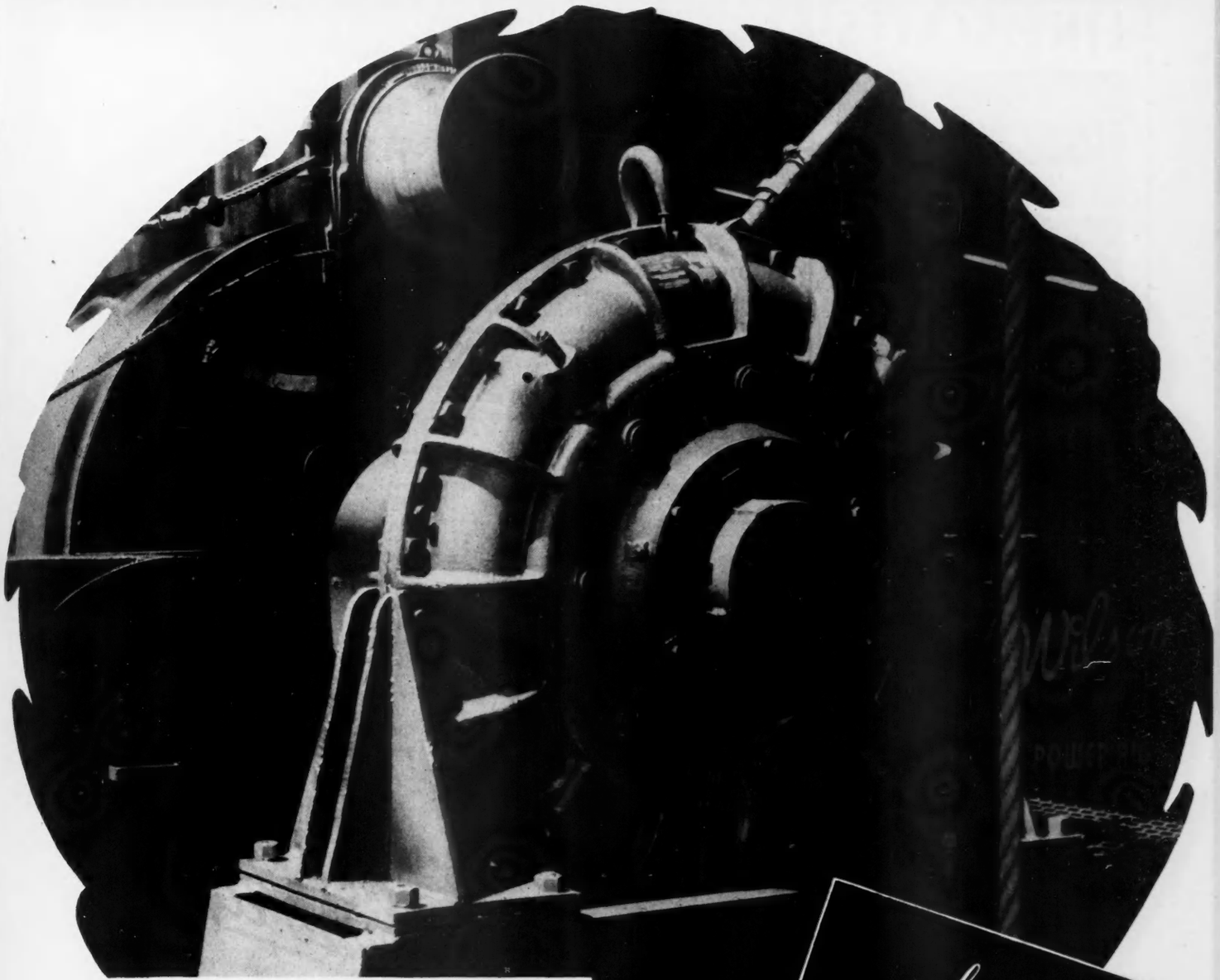

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Today, the Hydromatic Brake is available in 15" single and double rotor sizes for use on workover rigs and light drilling rigs. These, like the larger size Hydromatic Brakes, quickly repay their cost in savings on mechanical brake linings alone.

Yes, Parkersburg Hydromatic Brakes are just as economical for a new depth record or a work-over rig . . . for *no operator has ever failed to make a profit on his Hydromatic Brake.* Ask your Parkersburg Representative for facts and figures. There's a size to meet every requirement.

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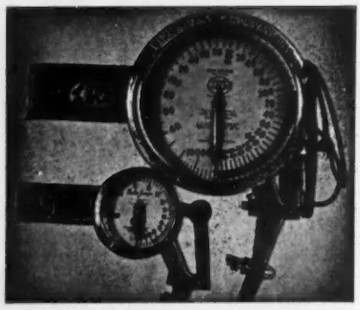

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No. 90—3 Pulley, plain or roller bearings, 3/4" rope
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No. 80—4 Pulley, roller bearings, 1/2" rope

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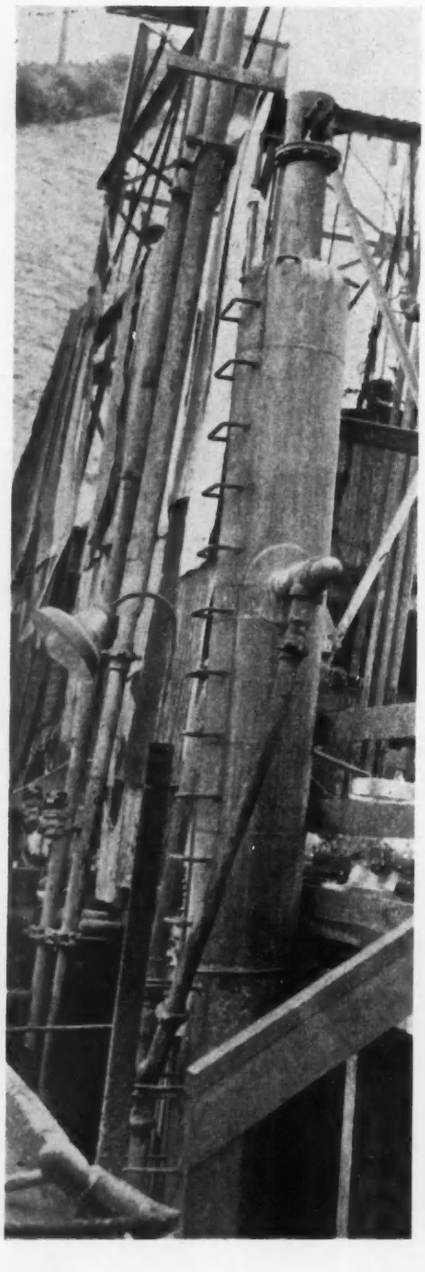
Degassification of Mud Speeded by Special Tower

One of the difficult problems that must be combatted continuously on deep drilling wells is that of keeping mud weights up to required values, particularly while penetrating formations known to be high-pressure and where drilling must proceed with great caution. Various means of maintaining mud weight have been devised by as many operators and with varying success. One company has developed a device unsually efficient in de-aerating gas-cut mud and which requires only a comparatively small amount of equipment in its construction.

MUD RETURN DEGASSING

It consists of a vertical 20-foot length of 24-inch heavy casing welded to form a pressure vessel which is stood up and lashed to the side of the rig, preferably on the side nearest the mud pumps. At diametrically opposite sides of this chamber at a point some six to eight feet from its top, were welded fittings containing special hard flowbeans. Mud under high pressure is forced through these beans, the two streams meeting each other in the center of the chamber. From the spray resulting from this violent impact there escapes much of the occluded gas which rises to the upper part of the reservoir and escapes to atmosphere through a pair of 1-inch fittings. A slight vacuum is maintained in the chamber by a small flow of steam passing across the orifice. The valve in the steam line ordinarily is barely cracked open, the steam required to keep the chamber exhausted being very slight. Mud falls to the bottom of the chamber where it is picked up and recirculated to the suction tank. Proof of the effectiveness of this type of mud de-aerating device lies in the fact that through its use, 70-pound mud has been increased to as high as 108-pound.

The tower takes little extra room at the drilling site, and in moving it can be carried almost as a complete unit. All fittings are readily accessible to workmen by means of a permanent ladder consisting of a series of steel-rod steps.



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NEW EQUIPMENT LITERATURE

For additional information, use mailing card inserted opposite this page

1—Air-Driven Saw

Air-Speed Tool Company is distributing an air-driven saw and file designed to use standard sizes of hack saw blades and files. Not much larger than an automatic pistol, the air-driven saw and file

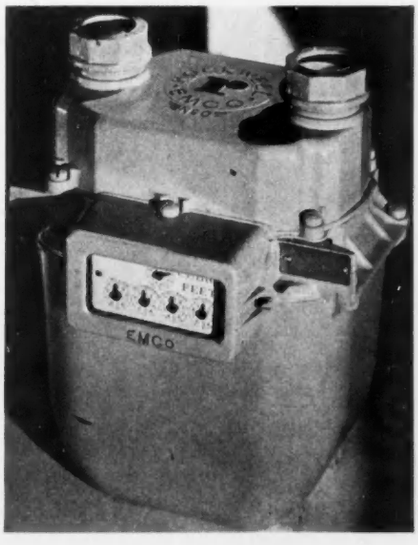
can be worked to advantage in awkward or cramped positions.

Trigger pressure regulates operating speed using air pressures of 85 to 100 pounds. Cutting action is accomplished on the back stroke, making it possible for the operator to use various lengths of high speed steel hacksaw blades.

(Check item 1 on coupon for more information.)

2—Gas Meter

The Pittsburgh Equitable Meter Division, Rockwell Manufacturing Company, has announced a domestic gas meter with an outer case of pressure cast aluminum alloy. Called the Emco



10, the meter case is light in weight, and is said to be corrosion resistant and protected against unusual atmospheric conditions by a special lacquer coating on all exterior surfaces.

The manufacturers claim three outstanding features of this meter reduce cost of domestic metering services: (1) rescaled proportions have been engineered into an approved meter design by the use of new metals and plastics in the working parts; (2) precision manufacturing techniques to improve performance and lengthen valve life; and (3) readily accessible parts to simplify repair and facilitate adjustments, even by the inexperienced workman using common tools. The meter weighs 16½ pounds, less than half the weight of the previous design.

(Check item 2 on coupon for more information.)

3—Eye Protector

Watchemoket Optical Company, Inc., Rhode Island, has developed an improved model 1-N eye saver which is being offered on the market. It is made of plastic with a rugged molded frame which the manufacturers claim resists breakage, wears longer, provides ample ventilation, and reduces fogging. This new-molded frame is said to fit comfort-

ably and is made with ample space to be worn over many styles of prescription glasses, giving protection against injury from all sides. The lens, made from impax methacrylate, exceed Federal specifications for impact-resisting goggles, and it is claimed that they will stop flying chips, splinters and hot metal and yet give clear, undistorted vision.

(Check item 3 on coupon for more information.)

4—Actuator

The Harold Beck Company has developed an automatic control actuator called the Beck Mechanism which operates valves, rheostats, auto-transformers and similar devices. It is said to make close control possible under rapidly changing loads, holds temperature or other conditions to an exact control point free from the drooping characteristic, and permits operation at maximum sensitivity.

Simple and sturdy in construction, this control mechanism has been designed to handle special control problems involving sequence action interlocks, directional contacts, maintain contacts and other switching arrangements. They are known to be widely used for control of gas-fired or electric furnaces, automatic reversal of regenerating furnaces, safety circuits for gas purging and in electrical testing apparatus. This control device is driven by a slow-speed, high torque, non-coasting control motor.

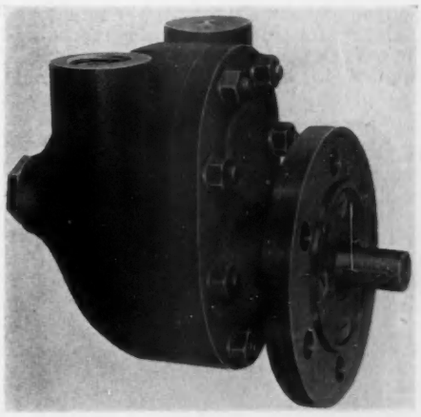
A non-mechanical magnetic brake assures accurate reproduction of minimum turn down and non-hunting control action which the manufacturers claim does not sacrifice sensitivity of the control.

The heavy motor shaft turns in grease-sealed ball bearings, and the armature can be stalled without damage to the mechanism or over-heating of the motor —another feature claimed by the makers.

(Check item 4 on coupon for more information.)

5—Hydraulic Pump

Pesco Products Company, Division of Borg-Warner, is manufacturing a new, all-purpose hydraulic pump, designed for commercial use and based on principles heretofore used and developed in air-

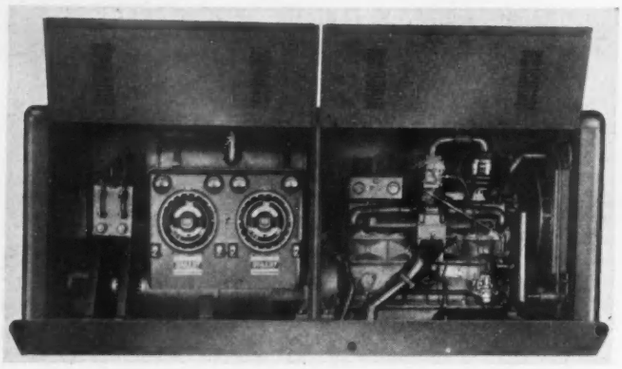


craft fluid pumps. Claimed to have a volumetric efficiency of more than 90 percent, this pump has a rated capacity of 15 gallons per minute under continuous operation at 1200 revolutions per minute and 1000 pounds per square inch.

Weight of the pump shown in the illustration is 13.7 pounds, and the principle of operation is based on what the manufacturers term "pressure loading," which is said to automatically compensate for wear of moving parts. It is announced that capacities up to 50 GPM at pressures up to 2000 pounds per square inch will be available in this type pump.

(Check item 5 on coupon for more information.)

6—Arc Welder



The Hobart Brothers Company has developed a two-operator gasoline engine driven arc welder by placing two 300-ampere generators on a common shaft, and supplied with separate excitation from a common exciter.

This double unit is directly connected to an eight-cylinder Chrysler Industrial Engine. Two operators can work independently of each other, since the engine is governed to maintain constant speed for all loads. A paralleling switch is also provided to turn the unit effectively into a single operator 600-ampere unit.

Because welding is inherently an intermittent load, two units can be connected to one engine to give a higher overall economy.

The generator paralleling switch is said to give the setup more flexibility, as it results in a welder of 600-ampere capacity for heavy welding and cutting duty. This paralleling unit effectively doubles the welding range of the conventional single operator unit and is of great value on construction and maintenance work where a great variety of welding is experienced.

(Check item 6 on coupon for more information.)

7—Oxygen Meter

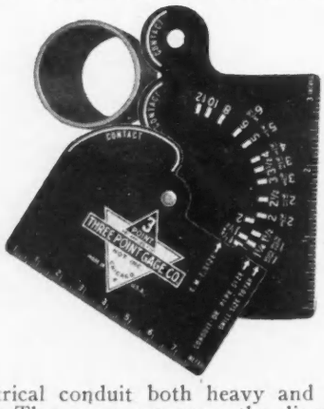
The Bailey Meter Company has developed a new automatic, continuous analyzer for indicating and recording the oxygen content of a gaseous mixture. Applied to boiler furnaces, kilns and

many types of metallurgical furnaces, glass tanks, chemical and petroleum processes, the instrument provides a graphic analysis almost instantly, and is said to be responsive to changes of .05 percent oxygen. This oxygen recorder can be applied to all types of furnaces operating with oxidizing atmospheres and permits closer regulation of fuel-air ratios, especially where multiple fuels are used, or where the firing rate changes rapidly.

(Check item 7 on coupon for more information.)

8—Gage

The Three-Point Gage Company announces a new model of the Three-Point Gage which will measure instantaneously, not only all sizes of pipe from ⅛-inch to 12-inch, but also all sizes of



electrical conduit both heavy and thin wall. The gauge measures the diameter by determining the outside arc at three points of contact, and by placing the two fixed contact points of one plate against the outer contour of the pipe or conduit and sliding the second or moveable plate until it makes a third contact. Markers on the face of the gauge show the size of the pipe and the correct drill size for tapping. Constructed of steel and measuring 2¾-inch by 4½-inch when closed, it is finished in a black rust-proof enamel with deep-etched numerals filled with white enamel. A leatherette case is also available if desired.

(Check item 8 on coupon for more information.)

9—Calculator

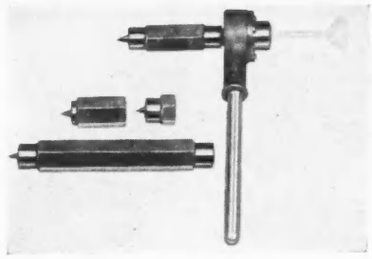
The Barrett Division of Allied Chemical & Dye Corporation has prepared a pipe coating calculator for use in paint or felt coatings of oil, gasoline, gas or water distribution and transmission systems. The calculator automatically calculates the surface area, the squares per 1000 feet and many other useful data for all commercial size pipes.

Knowing the pipe diameter, it is possible to determine the quantity of paint necessary for a desired thickness of paint coating of a length of pipe. The Barrett Division also has issued a manual of field procedures for coating pipe line transmission systems. It gives detailed procedures on enamel application temperatures, factors to use for unavoidable waste, methods of application, inspection, pipe handling requirements, shielding and other information to establish good coating practice.

(Check item 9 on coupon for more information.)

10—Drill-Driver

Development of the new liberty ratchet drill-driver is announced by Techtmann Industries. Designed for drilling between studs and joist or restricted spaces in buildings or other structures, this tool



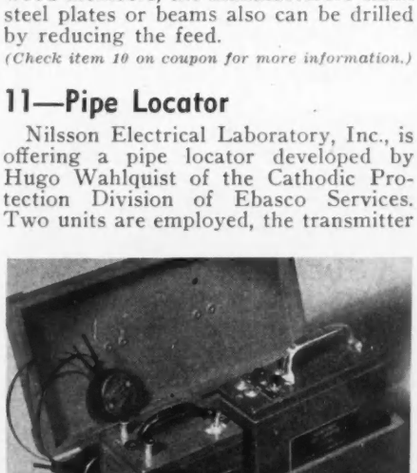
is claimed to give positive feed at each turn of the drill bit. The compact head allows centering of holes within 1¼ inches of the nearest obstruction. Any standard wood bit can be used, or steel drills can be used with an adapter.

Large wearing surfaces have been hardened, for longer life, but any part can be replaced if necessary. The drill-driver can be used up to three inches, and although intended primarily for wood members, the manufacturers claim steel plates or beams also can be drilled by reducing the feed.

(Check item 10 on coupon for more information.)

11—Pipe Locator

Nilsson Electrical Laboratory, Inc., is offering a pipe locator developed by Hugo Wahlquist of the Cathodic Protection Division of Ebasco Services. Two units are employed, the transmitter



and the receiver. Weighing only four pounds and contained in a wooden case, the transmitter is the source of a signal which, through various applications depending on the requirements of the job,

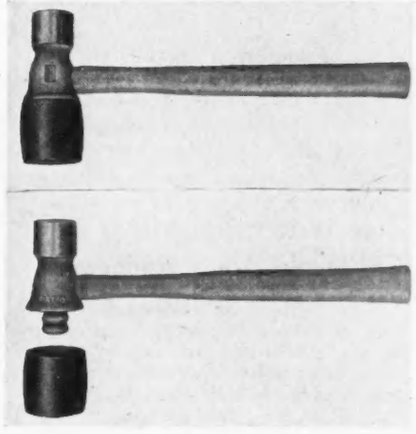
will have greatest amplitude nearest the pipe or underground conductor.

The receiver, of the same weight and construction, is carried by the operator, and through the use of headphones, is able to locate the point of loudest signal emission and can follow the submerged conductor by following the path indicating the strongest signal. It is possible through this new locator to determine the depth of the pipe, and by special application, can be made to follow pipes submerged in water. For extreme conditions, such as complex pipe systems, additional attachments are required.

(Check item 11 on coupon for more information.)

12—Hammer

Dan Morey has developed a 2-in-1 hammer for use wherever a solid blow must be struck without injury to working surfaces. It is practical in the industrial plant for tool and die makers, sheet



metal seaming, machine shops, auto repair shops, woodworking, and many other uses.

Three pieces compose the hammer—the removable rubber head, the steel head and shank and the handle. The head is easily replaced when worn and can be pressed on in a vise. The handle is of hickory, the shank and head of drop forging, heat treated and polished, and the two-inch rubber head is compounded of truck tread rubber to give the hammer the correct degree of toughness based on shop experience and laboratory tests.

(Check item 12 on coupon for more information.)

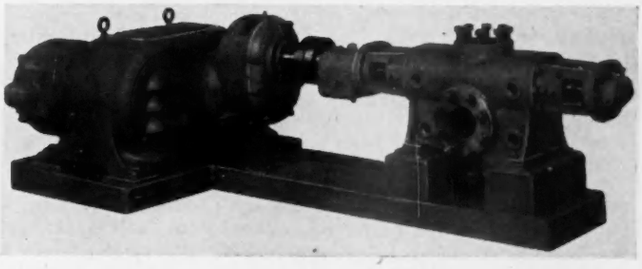
13—Fire Hose

The United States Rubber Company has developed a fire hose, small in diameter and light in weight, designed to withstand 800 pounds working pressure for fighting fires by use of artificial fog. Fog is particularly effective against burning oil and other inflammable liquids, and also has been used successfully at Army airfields in rescuing personnel from burning planes. A blanket of artificial fog spread over a fire quickly cools the zone of combustion, and the steam aids in smothering the flames. Use of the artificial fog is not recommended for large masses of burning material because in this type of fire, a heavy stream of water with plenty of penetration is required.

(Check item 13 on coupon for more information.)

14—Pump

Quimby Pump Company, a division of H. K. Porter Company, Inc., announces new developments in its balanced quadruplicate screw pump.



Improvements are demonstrated by the new external bearing pump designed with bracket type anti-friction thrust and line bearings. Separate pedestals with the three-point alignment problem and spacing washers are eliminated, providing free expansion of shafts for wide changes in temperatures. Precision preloaded anti-friction bearings permit close running clearance between the body bores and the screws.

This new construction can be provided on all existing pumps without disturbing present pipe connections or location of the motor.

(Check item 14 on coupon for more information.)

Literature

15—Cleaning

Oakite Products, Incorporated, has published a booklet on steam detergent cleaning.

Described in this booklet are many applications of steam detergent cleaning for cleaning machinery equipment and parts for subsequent repair and overhaul, preparing equipment surfaces for repainting or refinishing, cleaning equipment too large for tank immersion, or where suitable tanks are not available, and paint stripping. Emphasis is placed on steam detergent cleaning as a simple, fast method for safely removing grease, oil, dirt, sand and other deposits from all types of equipment through the combination of mechanical force, controlled heat and effective detergent action of recommended materials.

(Check item 15 on coupon for more information.)

16—Engines

Detroit Diesel Engine Division, General Motors Corporation, has issued an eight-page folder, Bulletin OFS-1, descriptive of the three Series 71 diesel engines most adaptable for oil field use. Basic features and technical data on each engine are included, as well as power curves and installation dimensions. Flexibility of the multiple engine units is described. Cutaway drawings show the transmission of power in these units to the power take-off shaft.

(Check item 16 on coupon for more information.)

17—Trucks

The Four Wheel Drive Auto Company has issued a folder describing four advanced series of four-wheel-drive trucks adaptable for oil field service.

(Check item 17 on coupon for more information.)

18—Finishing Wheel

Manhattan Rubber Division of Raybestos-Manhattan, Inc., has issued two new bulletins. Bulletin 6881-A describes the company's new engineered finishing wheel, an abrasive wheel bonded with synthetic rubber. Engineering data is given on operating performance of the polishing wheel, and also gives the range of application. Bulletin 6878 describes the new vibration dampener bushing which is being built into Manhattan wheels for portable grinders.

(Check item 18 on coupon for more information.)

19—Power Units

Unit Rig & Equipment Company offers a bulletin describing the unitized draw works and power units of the firm's model U-15 drilling unit. It is rated for 3000 to 7500-foot holes and for most deep holes when used in workovers. The 16-page booklet is fully illustrated and gives several varied applications of the unit.

Designed as booklet BU-60, it gives pertinent engineering data for application with various makes and models of engines.

(Check item 19 on coupon for more information.)

20—Diesel Drilling Engine

The National Supply Company has published a bulletin describing the Superior PDT Diesel Drilling Engine. This 18-page bulletin, No. 318, fully illustrates the six and eight-cylinder heavy duty engine, with pictures of several applications. It also lists the specifications, shows cross sections and gives engineering data on operating characteristics. A blueprint section of the booklet has side and end views of the engines with pertinent dimensions shown.

(Check item 20 on coupon for more information.)

21—Pumps

Marlow Pumps has issued a bulletin describing the line of "Marlow Mud Hog" pumps which consist of power-driven diaphragm and plunger pumps for general use.

(Check item 21 on coupon for more information.)

22—Repair Equipment

Kerkling & Company has issued a 12-page booklet describing the company's line of engine block and radiator repair equipment and giving much practical information relative to this type of work.

The patented mechanical method of stopping and repairing engine block cracks is covered thoroughly and illustrated by diagrams and photographs.

(Check item 22 on coupon for more information.)

Crude Production Declines Slightly; Small Gain Made in Runs to Stills

The production of crude oil dropped slightly, while a small increase was made in runs to refinery stills during the week ended March 30.

Heavy fuel oil output was increased, but failed to meet the market requirements by nearly 23,000 barrels per day, while stocks of light fuel oil continued to accumulate despite a slackening in production. An increase in gasoline output exceeded market needs and resulted in an addition being made to already high stocks. These trends were indicated by The American Petroleum Institute.

Crude oil was produced in the United States at a daily rate of 4,425,000 barrels during the week, a decrease of 6000 barrels per day from the previous week, and 356,000, or 7.4 percent, from the same week of last year.

Runs of crude to U. S. refinery stills averaged 4,684,000 barrels daily, an increase of 1000 barrels over the preceding week, and 31,000, or 7/10 of 1 percent, over the same period a year ago.

Refinable crude oil stocks amounted to 225,153,000 barrels on March 23, reported the U. S. Bureau of Mines. This shows that crude stocks were reduced 1,080,000 barrels during the week, but are still 3,926,000 barrels more than was on hand March 24, 1945.

The output of gasoline, including natural blends, for the week totaled 13,896,000 barrels, an increase of 164,000 barrels over the previous week, but 980,000 barrels, or 6.6 percent, less than the comparable week of last year. An addition of 153,000 barrels was made to stocks during the week, bringing them to 104,715,000 barrels, 7,113,000 barrels, or 7.3 percent more than was held a year ago.

Distillate fuel oil production, cut back 157,000 barrels from the previous week, amounted to 5,357,000 barrels, an increase of 697,000 barrels, or 15 percent, over the corresponding week of 1945. Distillate fuel stocks continued to rise and ended the week at 28,240,000 barrels, an increase of 1,573,000 during the week, and 1,558,000 barrels, or 5.8 percent, more than the 26,682,000 barrels on hand one year before.

Production of residual fuel oil during the week amounted to 8,738,000 barrels, an increase of 142,000 barrels over the previous 7 days, but 96,000 barrels short of last year's production. Withdrawals from distillate fuel stocks amounted to 160,000 barrels, leaving current inventories at 37,746 barrels, a new low for the year. These stocks are 3,365,000 barrels, or 8.2 percent, under the 41,111,000 barrels held a year ago.

Trends of Operations and Changes in Stocks

Figures on crude stocks are from Bureau of Mines weekly reports; all others from American Petroleum Institute weekly reports, which are estimates on Bureau of Mines basis.

(All figures in thousands of barrels—add 000)

HIGHS AND LOWS OF RECENT YEARS

ITEM	Crude Oil Prod.		Runs to Stills		Crude Stocks		Gasoline Stocks		Gasoil and Distillate Stocks		Residual Fuel Oil Stocks	
	Barrels Daily	Week Ended	Barrels Daily	Week Ended	Barrels	Week Ended	Barrels	Week Ended	Barrels	Week Ended	Barrels	Week Ended
Highs:												
1941	4,337	11–22	4,120	10–18	266,187	3–29	99,727	3–29	[1]54,983	11–15	102,448	1– 4
1942	4,337	2– 7	3,961	1– 3	263,208	3–28	[1]109,281	3–14	47,861	11–14	95,857	1– 8
1943	4,436	11–13	4,331	12– 4	245,752	5–29	94,159	3–20	47,187	11–27	72,881	1– 2
1944	4,762	9–30	4,798	12–30	240,992	1– 1	89,162	4– 1	48,162	10–28	64,744	10– 7
1945	[1]4,944	7–14	[1]5,140	8–18	227,554	10–13	99,012	3–24	45,341	11–17	56,074	1– 6
1946	4,726	3– 2	4,779	3– 2	229,430	3– 2	105,233	2–16	35,199	1– 5	42,371	1– 5
Lows:												
1939	[3]1,601	8–26	3,125	2–18	[2]229,127	10–12	71,152	10– 7	20,722	4–15	105,397	4– 3
1941	3,364	1–11	3,490	1–18	240,399	11–15	79,923	10– 4	28,382	4–12	90,914	7–13
1942	3,297	7– 4	3,393	5–23	231,896	12–12	75,934	12– 5	29,240	4–25	72,962	12–26
1943	3,821	1– 9	3,579	3–18	232,191	1– 9	68,182	10–16	30,732	4– 3	57,596	12–25
1944	4,357	1– 1	4,228	2–12	220,258	9– 9	76,302	1– 1	30,232	4–19	49,737	3–18
1945	3,621	10– 6	3,409	10– 6	[4]211,813	8–25	70,791	10–13	26,483	3–17	38,548	5–26
1946	4,403	3– 9	4,498	1–12	218,193	1– 5	98,494	1– 5	25,131	3– 9	37,746	3–30

TRENDS OF 1945 AND 1946

Trends in Week Ended	Crude Oil			Gasoline		Gasoil and Distillate		Residual Fuel	
	Production Daily	Runs to Stills Daily	Stocks Week End	Production Weekly	Stocks Week End	Production Weekly	Stocks Week End	Production Weekly	Stocks Week End
1945:									
January 27	4,727	4,756	221,310	14,957	88,223	4,843	33,561	9,252	51,119
February 24	4,777	4,803	219,351	15,500	95,972	4,958	28,753	9,084	46,713
March 31	4,781	4,677	223,782	14,644	98,758	4,548	26,889	9,184	41,745
April 28	4,805	4,780	223,474	14,633	94,068	4,636	28,273	9,379	39,813
May 26	4,887	4,950	222,831	15,194	89,121	4,667	29,184	9,670	38,548
June 30	4,903	4,999	220,781	15,546	86,472	4,910	32,213	9,077	40,488
July 28	4,930	4,996	218,507	16,106	86,008	4,598	36,071	9,586	42,283
August 25	4,982	4,931	[4]211,813	15,986	84,693	4,960	39,782	9,356	46,201
September 29	4,357	3,812	222,387	11,913	79,552	3,940	43,689	7,047	46,853
October 27	4,273	4,838	224,230	15,530	74,335	5,159	43,472	8,691	45,943
November 24	4,469	4,648	219,363	15,681	83,184	4,802	45,258	8,800	47,474
December 29	4,474	4,729	218,918	14,546	95,205	5,055	36,651	8,765	42,447
1946:									
January 5	4,548	4,651	218,193	14,488	98,494	5,293	35,199	8,867	42,371
January 26	4,626	4,553	220,544	13,622	101,737	5,720	29,498	8,411	39,722
February 23	4,714	4,595	226,699	13,175	104,709	5,728	25,398	7,913	39,290
March 2	4,726	4,779	229,430	13,871	104,462	5,888	25,148	8,634	38,441
March 9	4,403	4,656	226,112	13,669	104,901	6,929	25,131	8,779	38,388
March 16	4,415	4,607	226,233	13,850	104,781	5,655	25,747	8,382	37,767
March 23	4,431	4,683	225,153	13,732	104,562	5,514	26,667	8,596	37,906
March 30, 1946	**4,425**	**4,684**	.....	**13,896**	**104,715**	**5,357**	**28,240**	**8,738**	**37,746**
March 31, 1945	4,781	4,653	[5]221,227	14,876	97,602	4,660	26,682	8,834	41,111
Change:									
In week	—6	+1	—1,080	+164	+153	—157	+1,573	+142	—160
In year	—356	+31	+3,926	—980	+7,113	+697	+1,558	—96	—3,365
In year	—7.4%	+0.7%	+1.8%	—6.6%	+7.30%	+15.0%	+5.8%	—1.1%	—8.2%

[1] All time peak. [2] Lowest between January, 1922 and July 1, 1944. [3] Lowest since October, 1922, due to shutdown of six Mid-Continent states. [4] Lowest since December, 1921. [5] Stocks, March 24, 1945.

Tide Water Promotions in California Areas Announced

Tide Water Associated Oil Company has announced the following promotions among its production department personnel in the Los Angeles, Ventura, and San Joaquin Valley districts:

William D. Goold, who for 18 years has been with the company in various capacities and who until recently was district production engineer in the Ventura District, has been promoted to assistant superintendent of the production department in the San Joaquin Valley. He succeeds the late F. M. Watkins.

Frank H. Kratka, Jr., formerly acting district production engineer in the San Joaquin Valley, has been appointed district production engineer at Ventura, succeeding Goold. He has been with the company six years.

Thomas E. Weaver succeeds Kratka as district production engineer in the San Joaquin Valley. He has been associated with the company since 1941.

William E. Perkes, formerly petroleum engineer at Ventura, has been appointed district petroleum engineer in the Los Angeles Basin with headquarters in the Los Angeles office. Perkes has been with the company since 1937.

Spacing Plea Granted

Forty-acre spacing for the new Southwest Antioch pool of Garvin County, Oklahoma, has been approved by the state corporation commission. On application of the Globe Oil & Refining Company and Vickers Petroleum Company, the commission ruled that future wells in the pool will be located in the northwest 10 acres of the quarter-quarter section. The spacing order will cover Sections 19, 20, 29, 30, 31 and 32-3n-2w.

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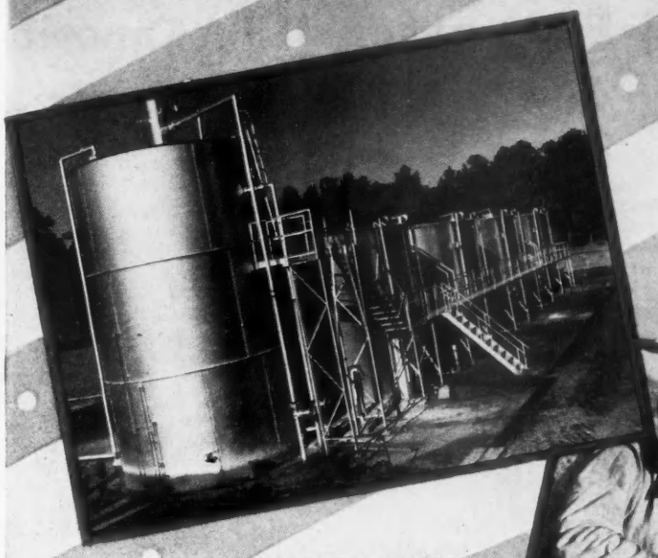

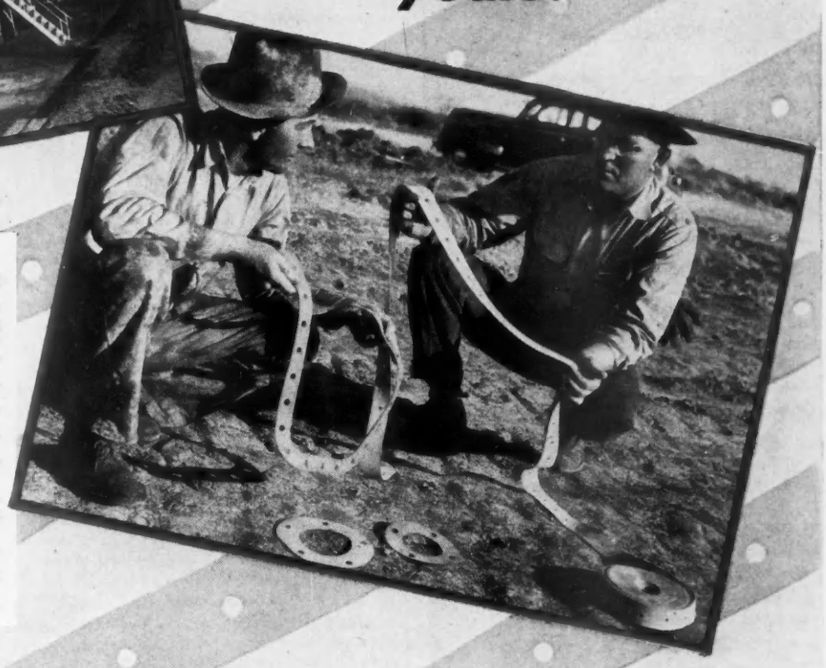

IN THE CONROE FIELD the crude oil must be treated before it is placed in the gun barrels. Part of this treatment consists of circulating the oil through heaters and, as a consequence, the oil enters the gun barrels under very high temperatures. As every operator knows, this means frequent reworking of the gun barrels to replace packing.

BUT NEOPRENE PACKING LIKE THIS (cloth inserted type) installed almost seven years ago, still gives a perfect seal today.

Nearly four times as long as the maximum life of the packing formerly used! And still going strong! That's the record of this special neoprene packing for the seams of gun barrels. Did not once require reworking all during the critical war years!

Thus, neoprene again dramatically proves its rugged qualities for oil field equipment—high resistance to wear and abrasion, to acids and chemicals, to oil and gas, and to sunlight and weathering.

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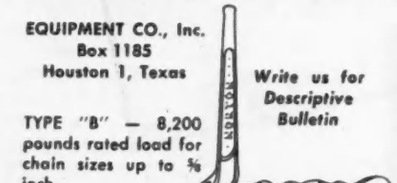

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THE METAL WARE CORP.
TWO RIVERS, WISCONSIN

Panhandle Eastern Would Hike Capacity Of System to 473 Million Feet Daily

Panhandle Eastern Pipe Line Company has filed an application with the Federal Power Commission for authority to construct and operate pipe line looping and additional compressor facilities with a view to increasing the capacity of its system from 383 million to 473 million cubic feet daily, at an over-all cost of approximately $27,300,000.

The project has been broken up into two parts, one of which, consisting of a number of expansions of compressor stations and the building of 50 miles of 18-inch and 24 miles of 26-inch line at a cost of $6,216,000, would be undertaken this year. The other, consisting of further station improvements, and the building of 34 miles of 18-inch and 357 miles of 26-inch line, the latter comprising 11 sections of loops, and new crossings of the Arkansas River in Kansas and the Sangamon River in Illinois, would be undertaken in 1947 at a cost of $21,097,000.

The commission on April 1 ordered the Montana-Dakota Utilities to establish reduced rates for common carrier transportation of natural gas by June 1, reflecting a demand charge of $13.25 per mcf. per year and a commodity charge of 7 cents per mcf.

A hearing has been scheduled for April 23 on an application of the Central New York Power Corporation for authority to make necessary additions to convert its present mixed and manufactured gas system to the service of natural gas to customers in a number of New York counties at a cost of $1,415,000. The company plans to construct about 47 miles of 12 or 14-inch line, 61 miles of six-inch line, and a 1200-horsepower compressor station, to effect the complete interconnection of existing pipe lines over the area it serves.

Proof Demanded That Mexico Is in Great Need of Texas Gas

Contending that there are adequate gas reserves south of the Mexican border to meet the needs of Gas Industrial de Monterrey, S. A., for which the Reynosa Pipe Line Company is asking authority for the export of 60 million cubic feet of gas daily from Texas, Chairman Olin Culberson of the Texas Railroad Commission asked the Federal Power Commission last week to deny the application unless it can be definitely shown that an urgent need for Texas gas exists and that the Mexican reserves will be developed with a view to supplanting United States gas as rapidly as domestic supplies become available.

The Reynosa case, which was heard last December, was reopened at the request of the Texas commission to permit the submission of evidence regarding Mexican reserves, which are now being developed in the Penitas field on both sides of the international border where, Culberson asserted, over ½ and possibly 4/5 trillion cubic feet of gas is on the Mexican side of the field.

Culberson said Petroleos Mexicanos already has completed two producing wells on the structure, with two more nearing completion and a fifth location spudded in. He said also that sufficient gas already is available on the Rancherias structures of the Ohio-Mex Oil Corporation in Mexico to supply the immediate added needs of Monterrey for the next two years or more.

Culberson also emphasized the desire of the Texas authorities to conserve natural gas for industrial use within the state. Recent developments have indicated that a number of new gas-consuming industries may locate in Texas in the near future, among them Carthage Hydrocol, Inc., which plans a $19 million plant at Brownsville for the production of gasoline, fuel and diesel oils and other products from gas, plans for which call for the consumption of 54 million cubic feet of gas daily, or almost as much as Reynosa seeks to export.

Carthage Hydrocol has applied for a $9 million loan from the Reconstruction Finance Corporation and a similar amount will be invested by a number of oil and gas companies and other interests, among them The Texas Company, Tennessee Gas and Transmission Company and United Natural Gas Company, and another $1 million will be raised by the sale of securities.

Michigan-Wisconsin Amends Application for New Lines

The Michigan-Wisconsin Pipe Line Company has amended its application for new pipe lines to substitute a 22-inch line from its No. 7 compressor station in Illinois to the Wisconsin state line for the 20-inch line originally planned. Also, in lieu of an 18-inch line to the Milwaukee area and an 8-inch line to Madison, Wisconsin, seeks both a 20 and an 18-inch line to Milwaukee, an 8-inch line to Madison, a 14-inch line from Milwaukee to lateral lines connecting Sheboygan, Oshkosh and Fond du Lac, and a 10-inch line from that area to Two Rivers, Manitowoc, Appleton and Green Bay, Wis.

The company stated that it plans a four-year program calling for the expenditure of $1,440,000 in 1948, $955,000 in 1949, $1,682,000 in 1950 and $18,103,000 in 1951, which will provide the necessary capacity for furnishing the full natural-gas requirements of Michigan Consolidated Gas Company beginning with 1952, and include the purchase from that company of the storage fields, gathering system and transmission mains, compressor station and the 26-inch transmission line to be constructed between the Austin field and Detroit.

New Treaties Apparently Aid Britain In Struggle for Middle Eastern Oil

Two treaties, recently signed, seemed to have strengthened Great Britain's position in Middle Eastern oil.

This is not only the view of American observers, but apparently it is also the opinion of Russia, because both treaties drew sharp criticism from Moscow.

The treaties are (1) Turkey and Iraq's joint security pact providing for broad collaboration on "security, economy, culture and flood control" and (2) a Great Britain Trans-Jordan pact which ends the British mandate and looks toward more harmonious dealings with that country.

Soviet spokesmen termed the Turkey-Iraq pact an "anti-USSR maneuver inspired by reactionary circles," and commented on the British-Trans-Jordan pact as follows:

"The strategic and political importance of Trans-Jordan in the system of British positions in the Near East is obvious. It is determined both by geographic location and by the fact that the British oil pipe line from Iraq to Palestine runs through that country."

The British agreement with Trans-Jordan precedes the pending treaty with Egypt now being negotiated in Cairo by British Ambassador Sir Ronald Ian Campbell and Egyptian Premier Ismail Sidky Pasha. The new Egyptian pact is expected to include recognition by Cairo of "the Empire's strategic requirements in the Middle East."

The Turkish-Iraq accord is a strong indirect support of Britain's interests in Iraq since Turkey is maintaining close ties with London. At the same time the disclosure of this treaty casts doubt on another report which has been current in industry circles lately that Moscow and King Ibn Saud of Saudi Arabia have reached an understanding.

A recent article in the Russian Navy publication *Red Fleet* accused Britain of blocking the independence and sovereignty of Middle Eastern nations and charged that the British were seeking to form a Middle East power bloc as a buffer between England and Russia, and were the instigators of the newly formed seven-state Arab League.

Although the report has been persistent of late in oil circles in the United States that Stalin and Ibn Saud have agreed to some accord yet to be revealed, industry officials best acquainted with Saudi Arabia put little credence in the story. Ibn Saud has demonstrated in the past that he places his reliance on friendly relations with Britain and on the continuance of British policy and maritime strength in the Middle East.

And while Moscow has been wooing the Arab states with persistence, as well as fomenting discontent among the Kurds and Turkomen, King Ibn Saud is believed to be too suspicious of Russian motives to exchange British favor for Russian. In fact, except in Palestine where Soviet infiltration has been extensive, especially through the schools, Russian "cultural penertation" generally has been ineffectual throughout the Arab world.

However, to offset Moscow's influence in Iraq and otherwise to combat anti-British sentiment, it is known that Iraq Petroleum Company at its London headquarters recently "took steps to protect its interests." The type of action which the company determined upon has not been disclosed.

While the consolidation of British influence throughout the Middle East is aimed primarily against the political aggression of Russia, the treaty links which are now being built up between London and the Near East states have an important bearing on future American petroleum operations abroad. Pipe line rights across Trans-Jordan for Arabian-American Oil Company, extension of American production in Egypt, and possible American entry into Iraq and other areas in the Middle East, are matters that stand to be affected through current British policy of redefining Britain's protectionist position in the Middle East.

Chile Plans Construction Of Refinery at Spring Hill

The President of Chile on February 22 signed a decree granting 100 million pesos (about $2 million) for the purchase abroad of a refinery to be installed at Spring Hill, according to the Chilean Telegraph Service. The plant would be located in the area of Tierra del Fuego, on the Isla Grande, where crude production was recently established by the government.

Burma Discovery

Reports from Rangoon quoted by the New Delhi radio state that oil deposits have been discovered in the Chin Hills in Burma. The report added that a mission of British experts will visit the area shortly.

Moravia Activity

The Fanto Petroleum Company drilled 46 tests in the Kromeriz area of Moravia, Czechoslovakia, during the war, the Prague radio recently announced, and drilling activity in that district will be resumed shortly.

Tax Annulment Asked

The Interstate Pipe Line Company has filed suit in the federal court at Shreveport asking annulment of a recently voted five-mill DeSoto Parish board tax, claiming the tax was gained through an illegal election. Defendants in the suit are the DeSoto Parish school board, assessor and sheriff and tax collector.

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☆ West Texas

Ellenburger Strike Sure for Northwest Edge of Penwell

Prolific Ellenburger discovery assured for the northwest edge of the Penwell field, Ector County; Reeves County wildcat improves its outlook for a deep gas-distillate strike; Ellenburger discovery in Kent County drilling below pay zone.

Ector County: Phillips Petroleum Company et al's Eidson-Scharbauer Unit 1, near C SW NE PSL 25, Block B-15, ¾ mile west of the north end of the Penwell regular Permian area, entered the Ellenburger at 8888 feet, or 685 feet high to a 9675-foot failure 2¼ miles southwest, and has confirmed flush production from the zone. A drill-stem test at 8920 feet resulted in flow of 38.3-gravity oil with gas reaching the surface within 17 minutes. A second test at 8920-45 feet yielded gas to the surface within 28 minutes and the well flowed oil at a rate of 75 barrels hourly during last 10 minutes of 68-minute test. Third test was pending at 8970 feet, or 82 feet in the Ellenburger. This strike is on a unitized block of leases participated in by 5 majors, with Tide Water Associated Oil Company holding 26.23 percent for the largest interest. An obligation was assumed to drill a group of scattered tests, thus causing development to spread rapidly. Nearest Ellenburger production is 11¾ miles northwest in the TXL field's 3 separate, but adjacent, reservoirs of high-gravity oil, while the intermediate acreage is leased almost solid in anticipation of more discoveries along the known trend.

John W. Murchison et al's T.P. Land Trust-Texaco 1, 3¾ miles south by west of Devonian production in the TXL field, and on 8500-foot prospect for the popular trend, entered the San Andres at 4020 feet, with elevation 3070 feet, and was drilling at 4680 feet. Lease requires production by October 11.

Cities Service Oil Company's Parker-Wentz 1, southwest side of the Harper field and 6 miles northeast of the Penwell field deep strike, entered the Devonian at 10,320 feet, or 3041 feet low to the latter, and was awaiting orders at 10,510 feet. A thick section of Pennsylvanian beds accounted for a substantial portion of the difference in structural position.

Stanolind Oil & Gas Company et al's Kayser-Unit 1, southwest outpost for the Foster area and a 13,400-foot prospect for 4 unitized sections, resumed drilling after a drill-stem test at 11,353-11,419 feet in cherty-lime failed. Base of Permian was called at 8380 feet.

Stanolind's Grisham-Hunter 1, previously listed as having uncovered oil from the Devonian for the North Goldsmith field, cemented pipe at 7903 feet while bottomed at 7956 feet, and will complete through perforations.

Reeves County: Argo Oil Corporation's Dora Roberts 1, C NW SE H&GN Ry. 294, Block 13, was pulling core at 10,124 feet in unidentified sand and lime. It is the deepest test in the Delaware basin proper, and has developed an adequate show of gas-distillate and gas with trace of oil from tests at 10,047 feet and 10,080 feet to warrant setting pipe for completion try. The Leonard, Basal Permian, was entered at 7840 feet.

Kent County: Humble Oil & Refining Company's Vick 1, 7 miles east by south of the Justiceburg pool and 105 miles from nearest Ellenburger production, was making a drill-stem test at 7938 feet, or 165 feet in Ellenburger. Oil flows resulted from tests at 7799 feet and 7816 feet, but 5 tests below were negative. A major lease and royalty play was precipitated by this initial strike for the county.

Andrews County: Shell Oil Company's Nelson-Humble 1, C NE SE PSL 8, Block A-40, and 1¼ miles east by north of a 10,929-foot granite failure, was attempting to complete a drill-stem test at 10,428 feet in Ellenburger, topped at 10,390 feet, or 228 feet high. The extent of shows in this wildcat are speculative.

South Fullerton-Devonian Field: Gulf Oil Corporation's University 1-Z, C NW NE Sect. 42, Block 13, east offset to the first big well in the area, flowed 2340 barrels of 46.4-gravity oil, with gas-oil ratio 937/1, natural through 1-inch choke at 8495-8630 feet in Devonian, topped at 8370 feet. Phillips' University 1-M, north offset to Gulf, entered the Devonian at 8297 feet, or 50 feet high, and flowed oil at a rate of 53 barrels hourly when tester was used at 8396-8547 feet. The latter will be drilled through the Devonian, then complete through perforations. Phillips paid $450,000 cash for this 320-acre lease in January, 1945, when it was classed as wildcat acreage. Mid-Continent Petroleum Corporation's Lotus 1, ¾ mile northwest outpost, entered the Fullerton (Clear Fork) pay at 6811 feet, or 1 foot high, and flowed oil through tester at 6900 feet. This outpost was drilling in lime at 7580 feet to explore the Devonian. All tests in the area have passed up indicated flowing production in the 6800-foot zone, which will result in twin drilling, and is expected to embrace a greater area than the Devonian.

Martin Field: The Atlantic Refining Company and Phillips' University 1-A-11, 1⅔ miles southeast extension for the Ellenburger pay and highest on structure, was running pipe after drilling to water at 9050 feet. First water was indicated during test at 8974-9025 feet in Ellenburger, topped at 8670 feet, or 144 feet high, while flowing production was developed from tests higher in the section. Sun Oil Company's Martin 2, north offset to the field's single Simpson (McKee) sand producer and a failure in this

Wells Completed in the United States in Week Ended April 6, 1946

Data preliminary and subject to revision. Revised and more complete data on all completions shown in monthly summary of drilling, published in second or third issue of each month. More detailed data on wildcats published in third or fourth issue of each month.

State or District	FIELD COMPLETIONS: New Wells *Oil	Gas	†Input	Dry	Total	Old Wells Deepened	WILDCAT COMPLETIONS *Oil	Gas	Dry	Total	ALL COMPLETIONS: This Week	Last Week	Cumulative: This Year	Last Year
Alabama	....	....	....	....	....	....	....	....	....	....	....	1	5	4
Arkansas	6	....	....	1	7	....	....	....	....	....	7	4	47	31
California	29	....	....	1	30	....	....	....	5	5	35	45	498	540
Colorado	....	....	....	....	....	....	....	....	1	1	1	2	25	8
Florida	....	....	....	....	....	....	....	....	....	....	....	....	5	4
Georgia	....	....	....	....	....	....	....	....	....	....	....	....	1	2
Illinois	22	....	....	12	34	....	....	....	3	3	37	36	466	428
Indiana	8	3	....	2	13	....	....	....	2	2	15	7	87	72
Iowa	....	....	....	....	....	....	....	....	....	....	....	....	....	1
Kansas	14	4	....	7	25	....	....	1	4	5	30	37	534	378
Kentucky	1	....	....	1	2	....	....	....	2	2	4	13	121	126
Louisiana	14	3	....	3	20	....	1	....	3	4	24	32	328	244
North Louisiana	10	3	....	....	13	....	1	....	1	2	15	12	168	74
South Louisiana	4	....	....	3	7	....	....	....	2	2	9	20	160	170
Michigan	4	....	....	1	5	....	....	....	3	3	8	9	174	179
Mississippi	4	....	....	1	5	....	....	....	1	1	6	6	65	97
Missouri	1	....	....	....	1	....	....	....	....	....	1	....	5	11
Montana	3	....	....	....	3	....	....	....	....	....	3	4	59	52
Nebraska	....	....	....	....	....	....	....	....	....	....	....	....	....	2
New Mexico	3	....	....	....	3	....	....	....	1	1	4	13	105	132
New York	15	1	10	2	28	....	....	....	....	....	28	25	275	228
Ohio	4	1	....	3	8	....	....	....	....	....	8	34	235	193
Oklahoma	19	8	1	9	37	2	....	....	9	9	48	52	680	596
Pennsylvania	27	8	15	....	50	1	....	....	....	....	51	50	709	727
Tennessee	....	....	....	....	....	....	....	....	....	....	....	....	1	....
Texas	86	7	1	25	119	1	11	2	29	42	162	140	2,092	1,850
E. Tex. Bor. Co.'s	....	....	....	1	1	....	....	2	....	2	3	1	47	22
Rest of E. Texas	5	....	....	....	5	1	1	....	3	4	10	12	136	52
North Texas	18	....	1	14	33	....	3	....	9	12	45	42	587	408
W. Central Tex.	3	....	....	1	4	....	....	....	2	2	6	7	160	105
West Texas	31	....	....	1	32	....	1	....	3	4	36	31	443	493
Tex. Panhandle	5	2	....	1	8	....	....	....	1	1	9	9	123	161
G. Coast, Upper	7	3	....	5	15	....	3	....	2	5	20	12	190	186
G. Coast, Lower	14	2	....	....	16	....	3	....	5	8	24	12	274	269
Southwest Texas	3	....	....	2	5	....	....	....	2	2	7	6	97	132
S. Central Texas	....	....	....	....	....	....	....	....	2	2	2	8	35	22
West Virginia	1	12	....	6	19	1	....	....	....	....	20	29	192	199
Wyoming	3	....	....	....	3	....	....	....	....	....	3	1	42	53
Total U. S.	264	47	27	74	412	5	12	3	63	78	495	540	6,751	6,157

* Includes distillate wells. † Includes salt water disposal wells.

zone due to being 101 feet low, was plugged back from 8840 feet to 8460 feet, and will set 5½-inch near the 8050-foot level. Martin 2 passed up 43-gravity oil at 8014-8151 feet in the Silurian, which promises to become the fourth oil pay for the area. Skelly's University 1-Z, midway between the Martin and Three Bar fields and an indicated oil discovery in the Basal Permial, was drilling lime at 8080 feet. Atlantic's University 1-D-11, 1-1/16 miles south by east of production, flowed oil briefly through tester from Basal Permian at 7790-7920 feet, was drilling at 8060 feet. This concern is starting 3 tests, including 2 as joint operations with Phillips in Sect. 1, which has been pooled.

Winkler County: Gulf's Keystone 69-E, which showed for a prolific flow of gas-distillate from weathered granite below the Ellenburger in the Keystone area, failed to encounter additional pay in drilling to 9871 feet, has been plugged back to 9629 feet to complete through Ellenburger perforations.

Pecos County: Wm. Y. Penn et al's Shearer 1, west corner of N¼ H&GN Ry. 41, Block 10, established a new field 3½ miles north of the Lehn shallow field and the same distance southwest of the Abell field in flowing 36 barrels of 35.5-gravity oil with gas-oil ratio of 1994/1 on potential test through tubing choke. The well flowed oil by heads prior to being given 50-quart nitro shot at 1940-60 feet.

Goldsmith Field Deep Pay: Stanolind et al's Scharbauer 3-Q, an Ellenberger failure for the north flank of the large structure, registered the first completion below the regular Permian zone in flowing 398 barrels of 40-gravity oil and 10 barrels of bottom sediment and water, gas-oil ratio 1334/1, on official gauge through ¼-inch choke. This production is from Clear Fork (Tubb) perforations at 6090-6185 and 6200-90 feet, and 5000 gallons of acid were used in both zones. Scharbauer 3-Q tested sulphur water in the Ellenburger at 8926-9155 feet. A small amount of oil was recovered from the Silurian after nitro shot. This zone and the Elenburger are likely to produce on the apex of the structure.

☆Central West Texas

Parker County Wildcat Has Nominal Show in Ellenburger

Parker County wildcat has nominal show in Ellenburger; confirmation well for Stephens County deep area is disappointing; Jones County wildcat has 20 feet of broken pay.

Parker County: Continental Oil Company's Woody 1, D. A. Deal Survey and 1¾ miles south of Poolville, logged a small show of gas at 6132-40 feet in Ellenburger, topped at 6110 feet with elevation of 1342 feet, and was drilling dry dolomite at 6420 feet. It correlates high to Ellenburger failures 3¼ miles west and the same distance southeast.

Stephens County: W. R. Skeen et al's Caldwell 1, C NW NE Sec. 32, Orphan Asylum Lands and ¾ mile southeast of Skeen's Ellenburger discovery for the Hatchett area, is installing pumping unit after swabbing 10 barrels of oil and a greater volume of water daily. Caldwell 1 is credited with entering the Ellenburger at 4180 feet, or 8 feet high, while it is producing from open hole at 4215-23 feet. D. C. Norcross et al's Garlitz 1, west offset to the Hatchett discovery, was drilling at 3450 feet, having entered the Bend at 3420 feet, or flat.

Jones County: Oscar Donley et al's Pritchard 1, T&P Ry. 24, Block 15, and 4400 feet northeast of production, but separated by a failure, set pipe on bottom at 2370 feet to try for completion through perforations. Oil pay was logged at 2340-60 feet.

Coleman County: H. T. Owen and Rhodes Drilling Company's Gorman 1, NW NW T&NO Ry. 31, Block 2, 2¼ miles southwest of the Williams field, showed for 2½ million cubic feet of gas daily after nitro shot at 3714-22 feet. The partnership's McClain 2, same area, was preparing to test broken oil pay at 3698-3728 feet, with pipe cemented at 3698 feet.

☆ North Texas

Foard County Wildcat Has Free Oil After Being Acidized

Foard County wildcat has nominal amount of free oil after acid; shallow prospect in Knox County may make pumper; King County multi-pay field has prolific well; Archer County deep area is expanded.

Foard County: Magnolia Petroleum Company's Steele 1, 7 miles southeast of Crowell and a failure in the Ellenburger at 5630-82 feet, was showing 5 to 10 barrels of oil daily on bailing test after using acid through Bend conglomerate perforations at 5322-32½ feet. This wildcat logged thin section of Mississippian, topped at 5418 feet, by electrical log. Seaboard Oil Company and Shamrock's Speck 1, an Ellenburger prospect, was drilling shale 4260 feet, while DeKalb Agricultural Association's Kincaid 1, with same objective, was drilling at 1520 feet.

Knox County: L. S. Youngblood and R. L. Foree et al's Bates 1-A SWc D&W Ry. 1, Block 2, west offset to a failure that showed oil, was making test of broken oil pay at 1615-20 feet in the Cisco series. Cities Service Oil Company's Mulkey 1, H&TC Ry. 163, Block 44, Truscott prospect, entered the Canyon at 4014 feet, and was drilling shale at 4440 feet.

King County: Humble Oil & Refining Company's Bateman 20, Sect. 117, extended the Bateman Ranch field's lower pay northwest in flowing 519 barrels of oil natural on 11½-hour test through tubing choke from open hole at 5144-5240 feet. Top of lime was called at 5129 feet with elevation of 1780 feet. This is the first flush production for the area, which the company controls through a 37,030-acre surrounding lease.

Archer County: Homer W. Snowden's Morrison 1, near center TE&L Sect. 1823, extended the Burns-Benson 2-pay area a mile northeast in heading about 10 barrels oil daily after acidizing perforations at 4495-4520 feet and 4605-15 feet in Bend, topped at 4495 feet, or 85 feet high.

Clay County: Continental Oil Company's Edwards 1, southwest offset to its Heard pool discovery, was considered a failure after testing water at 6490-6606 feet in Ellenburger, topped at 6481 feet, or 21 feet low. The Bend was entered at 5770 feet, or 8 feet high to the field's structurally low Bend producer. A recheck of the log will be made before plugging.

Grayson County: Denver Producing & Refining Company's Jewell 1, prospective Oil Creek sand producer for the Sadler area, was trying for water shutoff after testing through liner, with slotted section at 8590-8640 feet. This well was plugged back from dry Ellenburger at 8818-9413 feet to 8717 feet.

☆ East Texas

Deepened Wildcat in Bowie Unable to Add to Pay Zone

Deepened wildcat in Bowie County fails to add to pay zone; preparations under way to complete Paluxy strike in Mount Sylvan area.

Anderson County: Hunt Oil Company has made location for a Travis Peak wildcat in the northwest portion of the T. G. Andrews-Pure 104-acre tract, Jose Pineda Survey, and 2 miles west by north of Jacksonville. No tests have been drilled in the immediate area. The Pure Oil Company assembled a block of about 5000 acres on geophysical and turned a portion of its acreage for a deep test.

Van Zandt County: V. J. Meyer and Danciger Oil & Refineries' Meredith 1, R. C. Morris Survey and 3 miles west of Edgewood, was drilling Rodessa sandy-lime at 7990 feet, with contract calling for a depth of 8300 feet, or 200 feet in the Travis Peak. The latter is due near the 8100-foot level. Delta Drilling Company's Martin 1, A. T. Flowers Survey and 4 miles south of Tundra, was drilling lime and shale at 6440 feet, having entered the Duck Creek at 6315 feet.

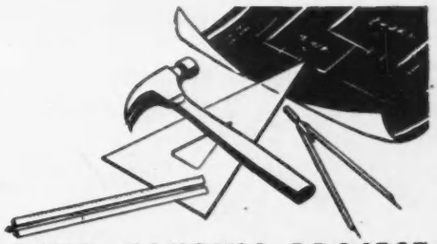
Bowie County: Barnsdall Oil Company et al's Pickering 1, recent gas-distillate discovery 2 miles southwest of Texarkana, from Smackover at 7030-94 feet, failed to increase its flow in deepening and coring to 7130 feet.

Barnsdall and Sohio Petroleum Company's Heilborn 2, discovery of the nearby Eylau pool and the first Smackover producer for the state, flowed 103 barrels of 38.7-gravity oil, with gas-oil ratio 216/1, on retest of perforations at 7710-14 feet. It had been penalized on allowable since completion in August, 1944, owing to high gas-oil ratio. Two failures offset this wildcat.

Smith County: Humble's Pool 1, Wm. Saunders Survey and 3¾ miles southwest of Mount Sylvan, was installing tanks and separator preparatory to moving in rig to perforate and complete. This wildcat showed for an oil producer from the Paluxy, topped at about 7190 feet, with about 136 feet of effective pay logged in drilling to 7601 feet. Pipe was landed last January and rig moved to cure titles. A major lease and royalty play swept the general area, and prices have not declined. Ed. Pace et al are starting Johnson 1, A. Kent Survey, to the southeast, and other lease owners in the area have mapped development programs.

Cherokee County: Humble Oil & Refining Company's Curtis 1, John Vaughn Survey, flowed 119 barrels of 47.8-gravity oil in tripling its flow on retest (flow was erroneously reported as 1119 barrels last week).

One Organization



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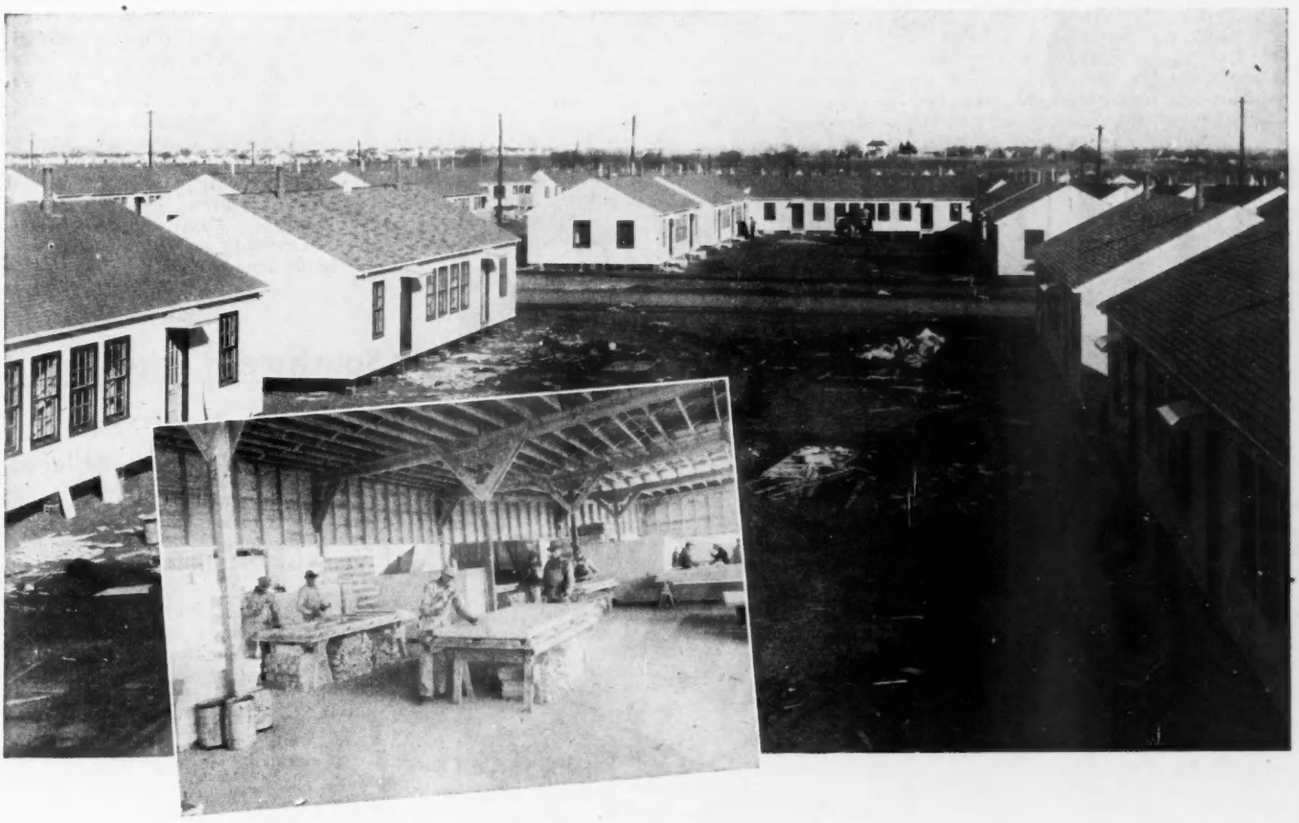

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☆ East Texas Border

Shelby Wildcat Continues Tests After Gas and Distillate Flow

Shelby County wildcat in Huxley sector shows 13 barrels of distillate per million cubic feet of gas in 24 hours; Marion County wildcat, which previously indicated oil production, tests dry in Cotton Valley; well on southwest side of Waskom flows 27 barrels oil in 12 hours through ¼-inch choke.

Shelby County: Humble Oil & Refining Company's Pickering Lumber Company 1, Francois Survey, Huxley sector, continued testing. After treatment with acid through perforations in the Pettit at 6606-28 feet, the wildcat flowed 7,800,000 cubic feet of gas and 13 barrels of distillate per million cubic feet of gas through 5/16-inch choke in 24 hours. The well went to total depth of 12,221 feet.

Panola County: Skelly Oil Company's S. E. Matthews 1, William McFaddin Survey, Carthage field, will take initial test this week. Perforations have been made from 6110-40, 6262-85, 6314-32, 6374-88 feet. Previously the well was credited with showing oil.

Marion County: Magnolia Petroleum Company's Orr 1, Fowler Survey, which previously had indicated oil production from the Travis Peak on a test below 7500 feet, perforated casing at 9935-45 feet in the Cotton Valley, but obtained no oil or gas show. The well plugged back to the Travis Peak at 7562 feet. Total depth was 10,513 feet. This discovery prospect is 4 miles southwest of Avinger. Another test may be started in the Avinger district on a site spotted by W. A. Patterson, but is understood to be awaiting final outcome of Magnolia's Orr 1, 3 miles south.

Harrison County: Rogers Lacy's W. E. Newman 1, L. V. Clark Survey, was abandoned at 7928 feet, after testing salt water in both Rodessa and Travis Peak zones. This is the first failure in the Whelan gas pool.

The Waskom area had a dual completion at Midstates Oil Corporation's Bryson 1, Anderson Survey, which gauged 11½ million cubic feet of gas daily from the Travis Peak at 5826-6160 feet, and 8 million cubic feet from the Pettit zone at 5575-5610 feet, open flow.

Arkansas Fuel Oil Company's Abney 1, Bryant Survey, on the southwest side of the Waskom field, gauged 27 barrels of oil in 12 hours, through ¼-inch choke, flowing from perforations at 5986-6034 feet in the Travis Peak. Other tests were under way at other levels seeking to reduce gas-oil ratio of 19,000/1.

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☆ Southwest Texas

Production Casing Is Set in Humble's Duval County Wildcat

Duval County wildcat sets production casing; Sun's wildcat in Webb County continues to core; Humble's test near Kelsey drills in sand and shale.

Duval County: Humble Oil & Refining Company's Dallas Joint Stock Land Bank 1, wildcat in the Hoffman area and about 1400 feet southwest of Gilcrease Oil Company's Rios 2, in the east corner of the SK&K Survey 503, set 5½-inch casing at 2737 feet after running an electrical log to total depth, 3200 feet. Operators will perforate for production tests near the 2700-foot zone.

Webb County: Sun Oil Company's Isaac Hirsch et al 2, wildcat 26 miles northeast of Laredo in Survey 203 and 417 feet northeast of the No. 1 dry hole, was coring below 7186 feet. Two previous drill-stem tests showed gas. The first was made at 6910-43 feet, while the second made at 6952-7010 feet developed 1500 pounds working pressure.

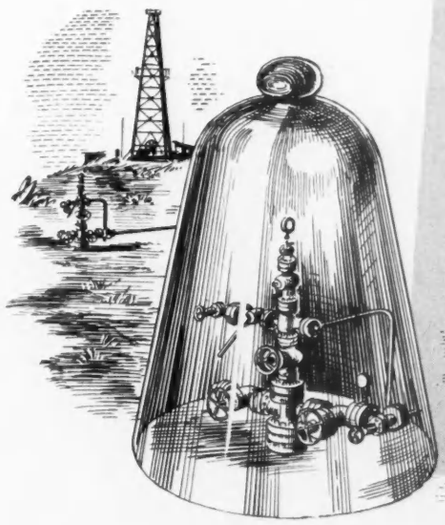
Jim Hogg County: Humble's Mrs. A. M. Kelsey Bass 23, wildcat in the southeast corner of the San Rafael del Norte Grant, 3000 feet northwest of the Bass 1, discovery well for the field, was drilling below 5500 feet in sand and shale. This is scheduled for a 10,000-foot test.

☆ South Central Texas

Humble Quits on Lee Wildcat; Bexar Well Tests Disappoint

Humble finally abandons its Lee County wildcat; Bexar County test makes unsuccessful tests; oil and gas shows indicated in Dimmitt County test.

Lee County: Humble Oil & Refining Company's George Vick et al 1, wildcat in the Bethel Smith Survey on a 300-acre lease, was finally plugged after extensive tests. Drill collar was lost



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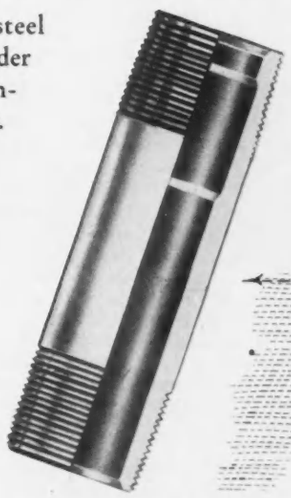

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while drilling at 8750 feet, and after several days of fishing, it was recovered. Operators cut and pulled 9⅝-inch casing before plugging. The best test reported was made at 6060-75 feet where the well flowed over a million cubic feet of gas and 100 barrels of fluid (1 percent high-gravity oil) through a 3/16-inch choke with 1725 pounds working pressure.

Bexar County: H. A. Pagenkopf (L. V. Chenoweth & Glen Harroun) et al's Max Blum 1, deep test at Gas Ridge in the M. F. Rodriguez Survey, was swabbed to bottom and the well filled 350 feet with muddy brackish water and some acid while standing over night. The well was drilled to 7198 feet where a spear was lost while fishing for pipe. The top of the junk was pushed down to 6880 feet and 5½-inch casing was set to 6850 feet for testing. First tests were made from perforations at 6055 feet and swabbed dry; then perforated as high as 4450 feet to re-test.

☆ Upper Texas Coast

Aldine Field in Harris County Yields New Condensate Pay

New condensate pay sand opened at Aldine; Humble completes North Angleton test for gasser; Bammel outpost completed in 2 sands; Colorado County wildcat prepares for official gauge; 2 saturated sands found in Saratoga flank test; good sand believed encountered in Blessing area wildcat.

Harris County: F. M. Corzelius' O. P. Hairgrove 1, E. Farias Survey, Abstract 278, 2000 feet southwest of the Browland 1 and 5750 feet northeast of the Phoenix Dairy 1 (both gassers), has opened a new producing horizon in the Aldine field. Discovered in 1939, the field produces from the 6600-foot and the 7900-foot levels, both in the Yeagua. This new sand is producing between these depths from 47 perforations at 7528-40 feet, flowing an unestimated amount of gas and condensate and developing 2250 pounds tubing pressure and 2225 pounds casing pressure. Producing sand was topped at 7527 feet.

Brazoria County: Humble Oil & Refining Company's Mettler et al 1-B, more than a mile north of Angleton field production and in the J. W. Cloud Survey, has been completed for million cubic feet of gas daily through a ¼-inch choke, developing 1300 pounds flowing pressure and 2300 pounds shut in pressure. Production comes from 10,416-436 feet where the casing was perforated with 100 shots.

Harris County: H. M. Harrell's Zapp Unit 1, Joseph Farwell Survey, west outpost to production in the Bammel field, has been completed for a gasser, with a flow of 2,379,000 cubic feet of gas daily through ¼-inch choke. The well, under flow, developed 1455 pounds tubing pressure and 1512 pounds when shut in. Production is through perforations at 6217-25 feet in the sand topped at 6215 feet and extending to 6230 feet.

Colorado County: Texas Gulf Producing Company's Earline Landig 1, wildcat in the James Cummins Survey, Abstract 13, and 5750 feet northeast of production at the Columbus discovery well, was making up final connection to flow tanks for an official gauge, and was temporarily shut in. Operators have completed the well in 2 horizons. From the lower sand, the well produces green oil of 46-gravity through a ¼-inch choke, developing 2200 pounds flowing pressure and 2800 pounds shut in pressure. This zone was perforated with 30 shots at 8392-98 feet. In the upper sands, the well was perforated at 7888-91½ feet, where an estimated 90 to 120 barrels of oil, no salt water, flowed through a 12/64-inch choke developing 800 pounds while cleaning into pits.

Hardin County: L. M. Josey et al's Caswell Trust Company 2, east flank test in the Saratoga field, on a 148-acre tract in the BBB&C Survey, A-311, 3000 feet from production and 240 feet west of the No. 1 dry hole, has encountered 2 saturated sands. The first was found at 5761-91 feet and the second at 5871-5926 feet. The well was cored to 5946 feet and was setting 5½-inch production casing for a test.

Matagorda County: Amerada Petroleum Corporation's Ike Laughlin 1, wildcat 3 miles southeast of Blessing, and east of the No. 1 junked hole on the Morrison Lease, John Holmes Survey, was drilling in hard shale at 8710 feet. Operators are looking for the same sands found in Morrison 1 junked hole, which picked up 10 feet of good saturation just below 10,000 feet. Operators were unable to test due to a bad hole resulting from side tracking. The No. 1 well attempted to blow out, causing the pipe to stick and the well had to be side tracked, and later junked.

Liberty County: The Ohio Oil Company's B. E. Quinn 2-A, wildcat test about a mile north of the Kirby Lumber Company 1, discovery well for the McCoy field, and in the Donahoe League, Abstract 24, was reaming hole at 9170 feet after running a log to 9874 feet, and drilling and coring to present depth of 9245 feet. A faulted condition was reported and it is not definite yet how the well correlates to the discovery well.

Chambers County: Standard Oil Company of Texas' State-Galveston Bay 3-M, outpost test in the Cedar Point field, and on a 640-acre lease in Sec. 118, has been completed from the open hole at 4241-55 feet for a potential of 102 barrels of 27.2-gravity oil daily (no water) through a 7/64-inch choke, with 1000 pounds flowing pressure on the casing and a gas-oil ratio of 800/1. Total depth of the well is 4255 feet and has 7-inch pipe cement to 4241 feet.

☆ Lower Texas Coast

New Operator Plans Completion Try on Old Alta Mesa Test

Tom Graham takes over old Alta Mesa area wildcat to attempt completion; Bee County has prospect of new field; Petronilla extension test prepares for production tests.

Brooks County: Tom Graham of Corpus Christi took over the old Maura Chavana dry hole 3½ miles southeast of the Alta Mesa field in La Encantada Grant from the Standard Oil Company of Texas to attempt a squeeze job using later type cements or plastics to shut off salt water intrusions which the former operators were unable to do. Originally drilled by Union Oil Company of California to 6652 feet, the well was abandoned in April, 1941, and taken over by Standard of Texas in September. The latter drilled to 7361 feet and set 7-inch casing at 7066 feet for production tests, but had difficulty and temporarily abandoned the hole. Gas-condensate sands were logged at 7110-20, 7285-90 and 7298-7322 feet, and a number of squeezes were made in an attempt to get a good cement job against high pressures, but these were unsuccessful and the well was shut in.

Bee County: Bridwell Oil Company's Sliva Estate 1, wildcat 9 miles southwest of Beeville and about 4½ miles southwest of the Yougeen field gas production, has set 5½-inch pipe to total depth of 4555 feet to perforate for a production test which indicates a possible new oil field in this area. A drill-stem test in the Stillwell sand at 4377-87 feet recovered 210 feet of oil and a little mud, developing 60 pounds working pressure after 20 minutes.

Houston Oil Company and Humble Oil & Refining Company's McKinney 1, extension test 4110 feet southeast of production in the Pettus field, was drilling below 5341 feet. This is scheduled for a Wilcox test.

Nueces County: Stanolind Oil & Gas Company's J. T. Gillette 3-A, 3000-foot southeast extension test of the Petronilla field, on a 430-acre lease in Block 7 of the Roberts & While Subdivision, has set 7-inch casing at 8795 feet after drilling to a total depth of 8800 feet. A 30-minute drill-stem test conducted at 6950-59 feet before setting pipe recovered 1560 feet of 39.3-gravity oil and 30 feet of mud and water through ¼ and ⅜-inch chokes to develop 125 pounds working pressure. Bottom-hole pressure was 2825 pounds under flow and 2930 pounds when shut in.

Jim Wells County: Magnolia Petroleum Company's Boerjan Unit 1, in Lot 10, Block 12, 1½ miles east of La Gloria townsite, ran an electric log at 4493 feet before setting protection pipe. Sands with an oil odor were picked up at 7154-56 feet, but a drill-stem test recovered salt water. At 7080-86 feet, a sand with a slight oil odor was encountered. Last reports had the well below 7200 feet.

Hidalgo County: Gulf States Producing Company's Refugio L. Cavazos 1, 4000-foot extension to the San Salvador field, San Salvador del Tule Grant, Tract 136, 11 miles northeast of Edinburg, was completed as a gas-condensate well and was waiting on an official gauge. Drilled to a total depth of 10,032 feet, the well has 5½-inch casing set to bottom and was perforated 8 times before completion in the 8400-foot sand.

DeWitt County: The Pure Oil Company's E. F. Karl 1, ½ mile south of the discovery well in the Yoakum field and in the John May Survey A-329, was completed for a potential of 38 barrels of oil and 52 percent of salt water per day through ⅛-inch choke from 9 perforations at 8863-65 feet. Gas-oil ratio was estimated at 20,868/1 and tubing pressure was 2100 pounds while the casing gauged at 1100 pounds. The well was originally drilled to a total depth of 11,334 feet and plugged back to 8667 feet.

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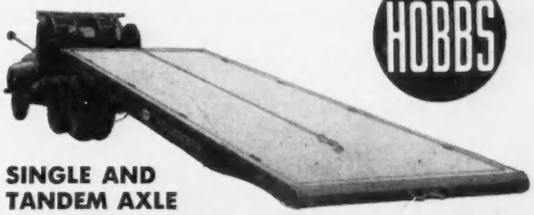

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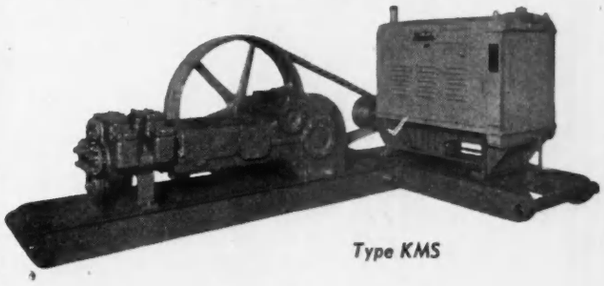

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☆ New Mexico

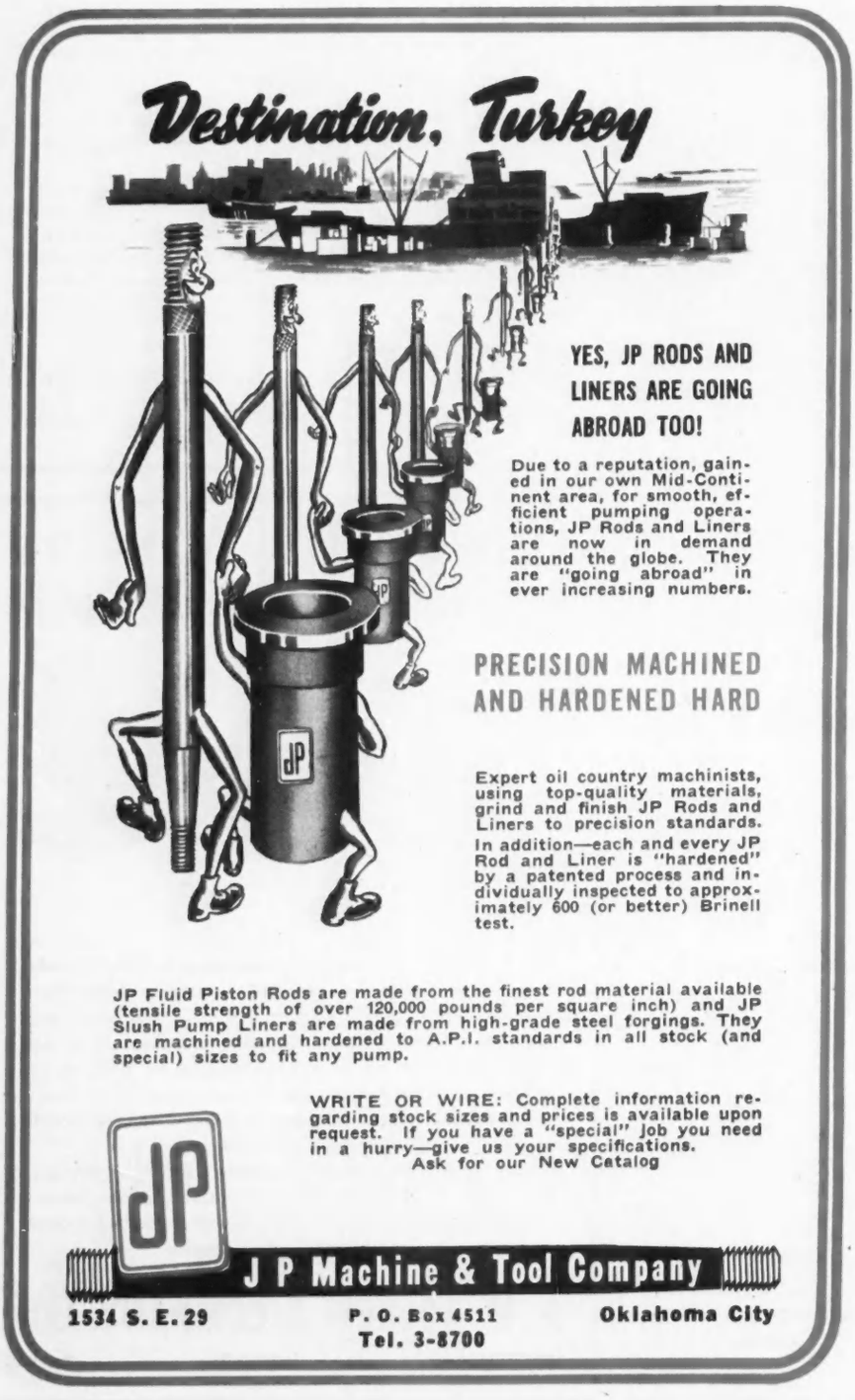
Ellenburger to Be Tested By Drinkard Field Outpost

Drinkard field outpost will test short section of Ellenburger, having entered granite; 3 zones of oil pay in Glorietta logged by Penrose-Skelly field completion; high granite top encountered by Roosevelt County wildcat.

Lea County: Amerada Petroleum Corporation's Baker 2, C SE SE 10-22s-37e, north offset to the original Glorietta pay sector of the Penrose-Skelly field, flowed 313 barrels of 38.5-gravity oil, with gas-oil ratio of 801/1, on 7½-hour test through ¾-inch choke after using 2000 gallons of acid through perforations at 5115-25 feet. The Glorietta showed effective pay below and above this section.

Lion Oil Company's Wylie 1, SW NW 5-23s-38e, south end of the Drinkard field, entered granite at 8518 feet, and will set pipe to acidize broken saturation and porosity logged in Ellenburger, topped at 8396 feet. Drill-stem tests failed. Previous attempts to explore the Ellenburger in this area revealed the granite immediately below the Permian, while Wylie 1 logged short sections of Devonian, Silurian and Simpson.

Roosevelt County: Southern Union Gas Company's Lucas 1, C SE SW 5-2n-30e, entered granite at 7146 feet, and will plug back to the 6200-foot level to test gas show in the Permian.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☆ Oklahoma

Mid-Continent to Plug Back West Moore Field Producer

Garvin County wildcat watched closely during tests; Mid-Continent to plug back exhausted Wilcox producer in West Moore field; Texas takes option on 40,000-acre Panhandle ranch; Hughes County "oiler" in new gas pool completed; abandoned wildcat in Kingfisher County to be worked over; Love County wildcat to go deeper.

Garvin County: Regarded as a possible discovery, R. H. Dearing & Sons' McBride 1, NE NW NW 30-4n-2w, wildcat, is being followed closely. The well had shows during 2 drill-stem tests. At 6573-88 feet it made an estimated 3 million to 5 million cubic feet of gas with a spray of oil. The well flowed about the same amount of wet gas and recovered 120 feet of clean oil during a second drill-stem test at 6593-99 feet.

Cleveland County: Mid-Continent Petroleum Corporation has made application with the state corporation commission for permission to plug back the Harris 2, NE NE SW 29-10n-3w, the discovery lease in the West Moore field. The well was completed for 525 barrels of oil a day in the Wilcox sand with total depth 8845 feet. As the well has exhausted production in the Wilcox, the company seeks to plug back to the Bartlesville-Burgess zone, which is covered in the pool spacing regulation.

Cimarron County: The Texas Company has taken a geophysical option on the 40,000-acre Hall & Nance ranch in Cimarron County, Oklahoma Panhandle. It is reported the option will allow the company to take a minimum of 17,500 acres under lease. The ranch is in Twps. 1 and 2 north, 3 and 4 ecm.

Hughes County: Oil production has been established in the gas pool opened this year by Skelly Oil Company southeast of the Yeager pool. Otha Grimes' Meadors 1, SW SE SE 23-8n-10e, flowed 50 barrels of oil in 3 hours through 1-inch tubing choke. Gas was gauged at the rate of 8,500,000 cubic feet per day.

Kingfisher County: J. A. King and associates have started work at Lankhard 1, NE NE SE 34-17n-6w, wildcat originally drilled by J. E. Trigg, Ace Gutowsky and J. W. Garr in 1938. The old hole was drilled to the second Wilcox sand with total depth 8330 feet. The Mississippi lime was topped at 7015 feet, the Woodford at 7530, the Hunton at 7564, and the Sylvana at 7843. The well was abandoned without testing any of the upper formations. Since Hunton lime production has been found in the West Edmond field, operators will clean out the hole and test the Hunton and other levels in the Lankhard.

Love County: The California Company's Wright 1, C NE NW 13-8s-1w, just across the river from the rich Sivells Bend fields of Cooke County, Texas, is drilling with the intention of going to 7400 feet.

Mississippi Severance Tax

Mississippi has gathered $2,272,000 on its oil severance tax during the first two full years of its operation, according to a report issued by the state tax commission. February receipts amounted to $100,272.20 as compared with $110,455.92 for January.

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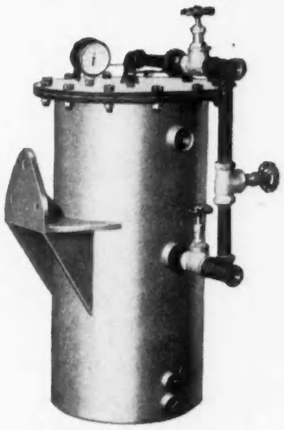

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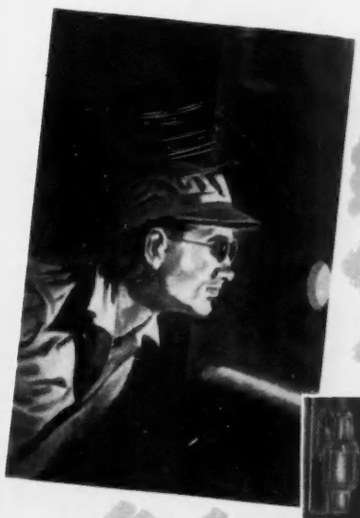

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☆ Kansas

Plug-Back in Barber County Makes Excellent Producer

Sinclair Prairie's plug-back in Barber County given 3000-barrel per day potential; well in Arnold pool gets production in Fort Scott lime; Bridgeport's reopened wildcat in Pratt County tested; Rooks County discovery makes 2535 barrels of oil per day.

Barber County: Sinclair Prairie Oil Company's Oldfather 1, C SE½ 7-31s-14w, in the Skinner Northwest pool of Barber County, has been completed with a top potential of 3000 barrels of oil a day. Finding production in the Arbuckle failing, operators plugged back to test the Simpson sand from 4422-26 feet and found the big production. The field has produced from the Viola and Arbuckle in the past, but the Oldfather 1 is the first well in the field to produce from the Simpson.

Ness County: The Fort Scott lime has been found productive in the Arnold pool by Sohio Petroleum Company's Drake 3, NW SW NW 26-16s-25w. After drilling to 4519 feet, the well was plugged back and perforated in the Fort Scott at 4445-52 feet and treated with acid. On a swab test the well produced 10 barrels of oil the first hour and 9 barrels per hour for the next 23 hours. The Fort Scott was topped at 4432 feet.

Pratt County: Bridgeport Oil Company has been testing Stoops 1, SE SE SW 7-29-12w, wildcat 4 miles north of the town of Sawyer in Pratt County that Shell Oil Company drilled and abandoned before Bridgeport took it over. In a 7-hour test the well flowed 62 barrels of fluid per hour and gas was estimated at 2,300,000 cubic feet. Production is from the Viola lime at 4446-52 feet and total depth is 4731 feet. Markers are the Lansing 3878 feet, Mississippi 4308, Viola 4446, Simpson 4537, and Arbuckle 4680.

Rooks County: Bird & Boreing's Verveka 1, CSL SW SW 27-8s-19w, new discovery 1½ miles north of the Barry pool, has established an Echometer potential of 2535 barrels of oil a day. The well had pumped 10 barrels of oil per hour from the Arbuckle lime at 3404-09 feet with the Arbuckle topped at 3403 feet. This is Rooks County's third discovery in the last month.

Missouri

J. E. Palensky's Wallace 1, SW NW NW 10-65n-36w, wildcat in Nodaway County, was still waiting on cable tools to drill cement plug. Four-inch casing has been set to 2012 feet and total depth is 2017½ feet. An oil show was reported at 2015 feet.

Cass County: Charles Walters' Bush-Pickering 1, SW NE 29-46n-32w, Forest City Basin, was preparing to spud. Ten-inch surface string of pipe will be set to about 100 feet.

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☆ South Louisiana

Oil Indications Found in New Level at East Moss Lake

Oil indications found in new level at East Moss Lake; Johnson's Bayou wildcat trying for production in 9200-foot zone; Sun continues production attempts in Singer area wildcat; Little Temple wildcat squeezes for another try; Continental abandons St. Martinville test after sticking pipe.

Calcasieu Parish: Continental Oil Company's Prairie Land & Canal Company 1-B, East Moss Lake field area, 3-11s-9w, has encountered sands at a new horizon which indicate oil odor and some saturation at a higher level than the producing field. The well cored from 9991-10,011 feet, recovering sand and shale with an oil odor. Sands were recovered at 10,011-031 feet showing oil odor and some saturation. Last reports had operators pulling cores from 10,031-047 feet. East Moss Lake field was discovered by Continental's Prairie Land & Canal Company 1 in 1944, and has only 4 producers, all from sands just below 10,400 feet.

Cameron Parish: Continental and Sohio Petroleum Company's Cameron Parish School Board 1, wildcat in Johnson's Bayou area, 16-15s-14w, was trying for a production test in the upper 9200-foot level after perforating that zone. The sand has been isolated by 2 squeeze jobs through 5-inch liner at 9223-30 and 9190-9200 feet.

Beauregard Parish: Sun Oil Company's Rice Land and Lumber Company 1, Singer area wildcat in 32-4s-11w, has been unable to make commercial oil shows in 8 successive tests. Latest tests through 40 perforations at 11,219-229 feet and through another 40 perforations at 11,122-132 feet showed water with a

slight indication of gas. The well will be squeezed through perforations at 9176-79 feet before attempting another production test near that level.

LaFourche Parish: Humble Oil & Refining Company's Louisiana Delta Farms Company 1, wildcat in Little Temple area, 19-17s-23e, begun in October, 1945, has been unsuccessful in obtaining a satisfactory production test after 4 attempts. Good indications were obtained in side-wall cores taken at 10,585-635 feet, but tests within this zone were not satisfactory. On a test through 32 perforations at 10,587-591 feet with 2-inch tubing set at 10,581 feet, the well flowed 18.9 barrels of fluid (52 percent salt water) in 3 hours, developing a tubing pressure of 3000 pounds. The well was then resqueezed at 10,631-636 feet, and operators will try again to get a dry test.

St. Martin Parish: Continental's Marcelite G. Fournet 1, wildcat in the St. Martinville field area, 6700 feet north of production, 113-10s-6e, has been temporarily abandoned at 12,375 feet after sticking drill pipe at this depth. An electric log was run to 12,004 feet with no shows indicated, and the well has 9⅝-inch pipe set at 9520 feet.

Washington Parish: Humble's Gaylord Container Company 1-B, wildcat in the Angie area, 42-1s-14e, was reported drilling below 7740 feet in shale and streaks of chalk. A log was run and side-wall samples taken to 6395 feet before setting 9⅝-inch pipe at 6383 feet.

Rapides Parish: Union Producing Company et al's Belgard 1, wildcat in the Big Island area, NE¼ NW¼ 14-4n-3e, topped the Tuscaloosa at 9260 feet where a gas kick was received. A drill-stem test in the open hole below casing from 10,025-209 feet developed 350 pounds working pressure and recovered the water cushion and fluid containing 98 percent salt water and 2 percent 40-gravity light green oil. A packer was then set at 10,168 feet for another test, but it failed to hold. Side-wall cores from 10,549-559 feet recovered 1 foot of hard, dry lime. The well was last reported drilling below 10,752 feet in shale.

Terrebonne Parish: Arkansas Fuel Company's Louisiana State 1, Lease 601, Twp. 20s-13e, wildcat scheduled for 12,500 feet, was reported nearing contract depth at 12,055 feet, drilling in shale. An electric log run to 10,206 feet gave no favorable indications.

☆ North Louisiana

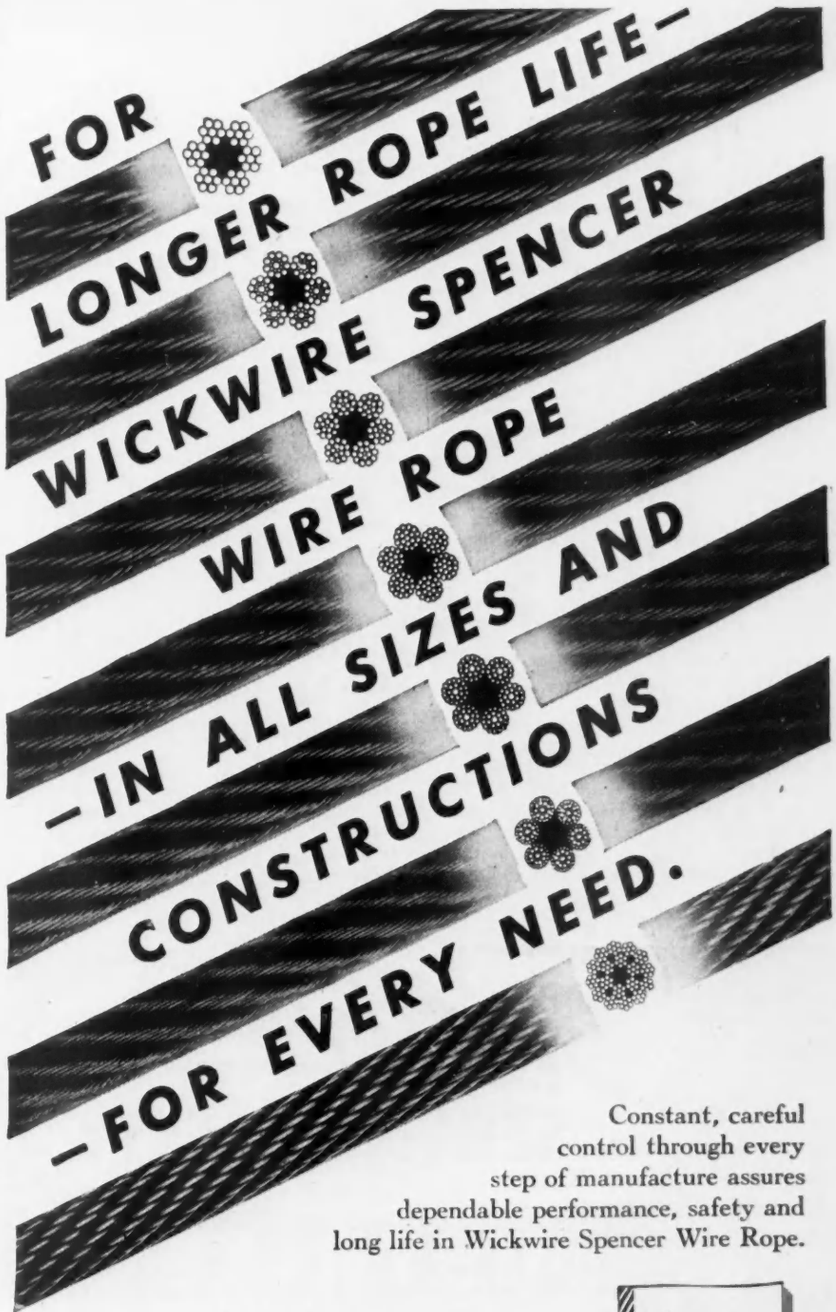
Richland Parish Wildcat Near Big Creek Flows Oil, Water

Richland Parish wildcat reported flowing oil and salt water; Waskom's newest producer is gas-distillate; wildcat scheduled 2 miles northwest of Waskom townsite, north of Waskom production.

Richland Parish: R. T. Sellars' L. P. Ford 1, NE NW NW 12-16n-7e, wildcat 1½ miles west of Big Creek production, was reported flowing 5 barrels of oil, 5 barrels of salt water per hour through ¼-inch choke on tubing, through perforations from 2845-50 and 2862-68 feet. Total depth is 3203 feet. A squeeze job is planned to shut off formation water.

Franklin Parish: R. J. Caraway-F. L. Bryant's wildcat, Mrs. M. L. Ruple 1, 9-16n-8e, 1½ miles south of Big Creek, had shows of gas-distillate in the Tuscaloosa at 3040-60 feet.

Caddo Parish: Phillips Petroleum



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Company's Waskom 1, SW SW 29-19-16w, was completed as a gas-distillate at 5584 feet, being the newest producer in the Waskom area. Gauge has not yet been made on production. Gas flow was estimated at 20-25 million cubic feet.

Union Producing Company's Noel Estate A-1, 11-19-16w, a Longwood area wildcat watched with keen interest, tested the Travis Peak sand from 5507-30 feet, recovered gas-cut mud, and squeezed. Same operator's Fly 1 wildcat, 19-16-16, Mooringsport area, was reported coring in shale and lime from 5790-5804 feet.

G. H. Alexander has rigging under way for Continental-American Bank & Trust Company et al 1, SWc 30-18-16w, 2 miles north of Arkansas-Louisiana Gas Company's Bell 1 producer, the most northeastern well in the Waskom area, and 3½ miles northwest of oil-gas production in the Longwood area.

Bossier Parish: G. H. Vaughan's Will E. Hall et al 1 (Benton Field Unit 8), SE NW 15-20-13, continued testing at 8060-66. It was reported a gas-distillate producer, flowing through 20/64-inch choke to the pits, 2100 pounds tubing pressure. As soon as sufficiently cleared it will be turned into tanks for official gauge. Meanwhile, there has been no production report.

Barnsdall Oil Company's Annie O. Hughes 1, NW SE 6-20-12w, was reported making test at around 8081 feet, with no report on results. Same operator's Carter-Burton 1 wildcat, 26-23-13w, Plain Dealing area, is drilling below 9370 feet in the Cotton Valley. Same operator's Crystal 1, 28-21-11w, is drilling on fishing job with progress below 8185 feet.

Claiborne Parish: W. O. Woodard, Trustee's Mattie Delony et al, 20-23-7, was reported flowing in pits for 4 hours after testing 80 shots at 4155-85, total depth 5337 feet, and closed in awaiting official test.

Hunt Oil Company's L. J. Birdsong 2, 22-23-7w, was reported making 391 barrels of 44.2-gravity oil from open hole through ¼-inch choke from 3138-60 feet, total depth 5160, gas-oil ratio 310/1. The Ohio Oil Company's Bond-Beene 1, deep test, 22-23-8w, is drilling below 10,576 feet.

Sabine Parish: Union Producing Company's Louisiana Long Leaf Lumber Company 1, deep wildcat, 29-8-11w, Zwolle area, was drilling at 6309 feet without shows. The Carter Oil Company's deep wildcat, Louisiana Long Leaf Lumber Company 1, 27-7-10w, was drilling in shale and lime at 5118 feet.

Grant Parish: R. D. Beville, Jr.'s, Swope B-5, SE SE 17-9-1e, after setting 7-inch pipe at 1590 feet, tested 8 barrels of fluid with 95 percent water and shut down awaiting orders at total depth of 1595 feet.

☆ Arkansas

Nacatoch Shows to Be Tested By Nevada County Prospect

Nevada County wildcat prospect prepares to test Nacatoch shows; Wesson field offset completed as dry hole; Columbia County well pumps 200 barrels of fluid, half oil.

Nevada County: Charles F. Steele et al's H. L. Waters 1, NW NE 20-14s-21w, prepared to test a possible field discovery in the Nacatoch sand, topped at 1208 feet, where at least 9 feet of oil saturation was logged. Total depth is 2263 feet, with 7-inch casing cemented at 1300 feet. Closest production is the Irma field, 2½ miles northeast. Steele et al have located Waters 2, SW NW NE 20-14s-21w, on the same 40-acre tract.

Ouachita County: McAlester Fuel Oil Company's R. W. Wesson C-1, NW SW SE 24-15-19, an offset, was dry at 3131 feet. Lechner and Hill's R. W. Wesson 1, NE NE NE 25-15-19, was completed in the James lime after a work-over job at 2911 feet. It will be placed on the pump. A. B. Turner's George L. Ritchie 2, NE NW NW 30-15-18, tested salt water in lime at 2876-2900 feet, but a survey showed production at other levels which will be tested when a squeeze job has been made. Paul Mosebach's F. S. Foster 1, SW SW NW 20-15-18, wildcat 1 mile east of the Wesson field, was fishing at 2075 feet.

McAlester Fuel Oil Company's C. M. Wesson B-3, NW SE NW 24-15-19, Wesson field, was reported flowing into tanks with no gauge. Casing was perforated at 2765-80 feet, and a gasser came in. This was squeezed off and cement drilled out, and the well flowed through perforations not squeezed.

Columbia County: R. H. Crow's W. G. Taylor A-4, NE SW NE 12-1-20, was perforated at 3062-94 feet in the James lime, acidized with 1000 gallons and the well put on pump for 200 barrels of fluid daily, half oil and half water.

☆ Mississippi

Wildcat Activity at Low Ebb; Cranfield Has Good Producer

Wildcat activity at low ebb; good producer completed in Cranfield area; Greene County test abandoned.

Franklin County: The Pure Oil Company's Ella G. Lees 3, SWc 32-7n-1e, has been successfully completed in an extension area of the Cranfield field to the east across the county line. Casing was perforated at 10,400-410 feet opposite the productive Massive sand, and with production packer at 10,372, well flowed at the rate of 324 barrels of oil per day through 5/32-inch choke. Oil and gas ratio was 930/1 and gravity of the oil, 37.7. The California Company's Homochitton Lumber Company 2, 29-7n-1e, which is attempting to extend the field a considerable distance east, is drilling below 9751 feet in the Tuscaloosa horizon. The Homochitto 1 in the same section was abandoned several weeks ago.

Adams County: California's National Gasoline 1, 52-7n-1w, discovery well of the Cranfield field, which will serve to reinject casinghead gas from other wells of the field back into the reservoir, is showing indications of establishing itself as a good condensate producer. Casing was perforated opposite the Massive sand and after acidizing the formation the well flowed 314 barrels of condensate with gas-oil ratio of 12,300/1. This new plan of reinjection of surplus gas back into the ground in order to maintain reservoir pressure is but a temporary expedient inasmuch as California is planning to construct a recycling plant which will take care of a large portion

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of the field's gas within the near future.

California's L. A. Whittington 4, 44-7n-1w, Cranfield, has been abandoned as a duster for the field's first development failure in some time. Casing was perforated at 10,317-331 feet opposite the Basal Tuscaloosa, but well only tested a flow of 5 barrels of fluid per hour, of which 90 percent was salt water. Total depth reached was 10,371. There were no shows reported from the Wilcox horizon topped at 4037 feet. Casing has been set for a production test of California's Ella G. Lees 9, 45-7n-1w, in Cranfield. Driller is working below 10,812 feet in the Comanchean horizon.

Phillips Petroleum Company's Davey 1, 46-8n-2w, which has shown indications of making a commercial producer, continues to experience trouble in completing. On latest tests well flowed a small amount of oil and then tubing filled up with sand to stop production almost entirely. Drillers are contemplating pulling tubing in order to clean it out.

Greene County: Humble Oil & Refining Company's Harry Stover 3, NEc 20-3n-7w, latest of the exploratory tests of the Byrd Dome, has been abandoned without shows being reported from any point in the hole. Eutaw was topped at 6732 feet and Massive sand at 8238 feet. Total depth was 8767 feet.

Wilkinson County: Danciger Oil & Refining Company's Geo. W. Armstrong 1, 5-4n-2w, Tuscaloosa test, is drilling below 8100 feet after running electrical log.

Jasper County: Mid-States Oil Corporation's Herrington 2, NEc NW NW 35-1n-12e, relative newcomer to the Heidelberg area, has successfully completed its well in West Heidelberg. Well was drilled to 6587 feet to test the Massive sand zone and shows of oil were noted in cores from 6290-6300 feet. On a subsequent drill-stem test, however, only salt water and mud were recovered and well was plugged back to the productive Eutaw horizon where casing was perforated at 4922-42 feet with 200 shots. Well was swabbed down and on initial production test it flowed 54 barrels of 24.6 gravity oil per day through 3/8-inch tubing choke. Gulf Refining Company's McIntosh-Cranford 1, SWc 6-10n-10w, West Heidelberg, has also been successfully completed with an initial flow rate of 192 barrels of oil per day.

Florida

O. D. Robinson's State Well 1, NEc NW 29-59s-40e, Monroe County deep test, has acidized section below 10,300 feet where shows of oil were previously noted, using 4000 gallons, but a subsequent drill-stem test failed. Hole was cored extensively to 10,450 feet with no further shows noted. Driller is now working below 10,562 feet.

Collier County: Humble Oil & Refining Company's Gulf Coast Realty Co. 6, C SW NE 19-48s-30e, Sunniland field, is drilling below 11,283 feet in lime and dolomite with no shows noted below 10,000 feet.

Franklin County: The Pure Oil Company's H. C. Lister 1, NWc 17-7s-7w, wildcat, is bottomed at 2250 feet while it undertakes to sidetrack stuck fish. No shows have been reported.

Alabama

The Carter Oil Co.'s Rex Allman 1, SW SE NE 4-10n-3w in the East Gilbertown field Choctaw County, is drilling at 3566 feet in chalk. This is the first activity noted for the field in several months.

Mobile County: Mikton Oil Company's Mike Vergos 1, SE NW 21-3s-2w, is running core tests below 6840 feet with no shows reported.

Winston County: Glen D. Rose's First National Bank of Birmingham 3, 7-12s-8w, wildcat, is bottomed temporarily at 1070 feet while new equipment is being set up.

Georgia

James E. Weatherford's H. Wilkes 1, about ½ mile west of Higgston, Montgomery County, is shut down. It is reported that the Southern Natural Gas Company has acquired an interest in the well with contract calling for driller to go for basement rock at 5000 feet.

☆ California

Outpost in East Los Angeles Field Sets Pipe at 9938 Feet

Outpost sets pipe in East Los Angeles field; Shell enters field as active operator; Gardena wildcat reaches 10,000 feet; Northeast Coalinga extension outpost in oil sand; good wells completed in Santiago area of Midway-Sunset field.

Los Angeles County: In the new East Los Angeles field Chanslor-Canfield Midway Oil Company stopped drilling in Bandini 1, outpost in 31-2s-12w, and set 9⅝-inch casing at 9938 feet. Operator was noncommital as to whether this was a protection string or whether a production test was to be made. Drilling below

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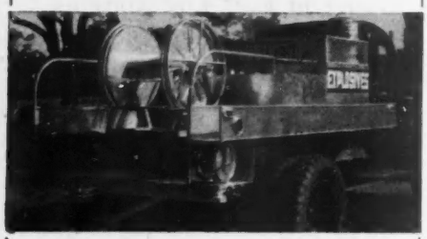

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10,000 feet has not been profitable in any Los Angeles Basin area to date.

Shell Oil Company, which acquired the C. G. Willis acreage in the East Los Angeles area last fall, has moved in equipment to deepen Willis' Pansini 1 in 23-2s-12w. Willis drilled the well to 8195 feet and quit and the well has been idle since last summer. Shell's intention is to deepen to about 9000 feet. Location is 1½ miles southeast of Richfield Oil Corporation's Vail 1, producer in 16-2s-12w and about 2 miles southeast of Richfield's discovery well, Union Pacific Unit 1 in 8-2s-12w. Shell's deal with Willis involved, besides the Pansini well, about 1000 acres southeast of, and adjoing, the Richfield holdings. Richfield has staked Vail 2 a location southeast of Vail 1, and is drilling Keller 1 in Sect. 9 below 4410 feet.

Kern County: Latest operator to undertake development work in the Cymric field is Universal Consolidated Oil Company, which staked Sauerdough 7, Oceanic zone test in 23-29s-21e, offsetting Honolulu Oil Corporation's Fitzgerald 26-1 in 26-29s-21e, which flowed oil on a recent formation test. In Sect. 27, Standard Oil Company of California has completed 81-27W on its Weston lease flowing 465 barrels of 37.5-gravity oil through a 12/64-inch choke. The Superior Oil Company's Woody 58-22 in Sect. 22, first well in the field to obtain Point of Rocks (Eocene) production, is currently producing 58 barrels of 50-gravity oil through a 9/64-inch choke and 4,287,000 cubic feet of gas.

In the Temblor area, recently proved productive by Independent Exploration Company in Temblor 2, 17-29s-21e, operator expects to complete Temblor 3, bottomed in oil sand at 2826 feet. The well is a location southeast of the discovery. Richfield is preparing to drill M. & L. Fee 1 in Sect. 18.

Several good wells have been completed in the Santiago area of the Midway-Sunset field. Most recent completion is General Petroleum Corporation's Sunset A-3 in 21-11n-23w, which flowed 920 barrels of 19.5-gravity oil, 20 percent cut, through 30/64-inch choke. The Texas Company's Western Minerals 5, also in Sect. 21, is flowing 438 barrels of 20-gravity clean oil through 16/64-inch choke. This well flowed 1585 barrels on a production test. Western Gulf Oil Company's I. M. Woodward-USL 7 in Sect. 21 was completed flowing 1550 barrels of 17.8-gravity oil through a 48/64-inch choke.

Fresno County: Standard's 48-7B, most northerly driller in the Northeast Coalinga Extension in 7-9-16, was coring at 8152 feet in oil sand, top of which was placed at 8100 feet.

Standard's test for Eocene production in the Jacalitos area, Ferguson 54 in 6-22s-16e, was unable to develop production in the Eocene and has been plugged back to 5805 feet to test the Temblor. Total depth is 7782 feet.

Solano County: Amerada Petroleum Corporation's test for gas in the Dixon area, Millar Community 2 in 2-6n-2e, blew on estimated 3,800,000 cubic feet on a test of 4 holes between 4627-28 feet.

Washington

Standard's wildcat, Ferndale Community 11-61-5, Whatcom County, is coring below 4710 feet.

Oregon

Texas' Cooper Mountain 1, Washington County, has been drilled to 7862 feet and operator is running 7-inch casing.

☆ Michigan

Mecosta County Output Heads For Dundee After Testing Gas

Rex Oil & Gas ompany's Skalitzky 1, NW NW SE 8-14n-7w, outpost a mile southeast of Smith's abandoned Wheatland field discovery, Mecosta County, showed a reported 10 to 15-foot rise on upper markers and made 2 million cubic feet of gas in the Stray sand on a drill-stem test at 1410-50 feet. Gas section has been cased off to permit drilling to the 3700-foot Dundee objective. Rex's outpost is being closely watched as a possible reviver of the area which caused a heavy lease and royalty play just a year ago. Smith Petroleum Company completed a promising Dundee oil well, Ortwein 1, SE NW NE 7-14n-7w, with production up to 82 barrels per day initially. Production dropped quickly and showed water cut after acid with the well abandoned three months later.

Ogemaw County: United Drillers & Producers' Anderson 1, NW NW NE 11-23n-2e, 2 miles southeast of the Rose City pool, swabbed 9 barrels of oil natural from the Richfield dolomite at 4000 feet. Outpost will be acidized when road conditions improve.

Rice Engineers Meet

The Engineering Alumni of Rice Institute, Inc., will hold its seventh biennial meeting at Ye Olde College Inn, April 13 commencing at 3 o'clock. Dr. William V. Houston, new Rice president, will be the evening banquet speaker.

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☆ Rocky Mountain Area

Wyoming Activity Picks Up as Five Locations Announced

Wyoming drilling activity picks up; Stanolind drilling 9 wells at Rangely.

Wyoming

After slumping to the low point of the winter season, drilling activity in Wyoming began to show its seasonal pickup as five new locations were announced and operators began calling for equipment and crews to launch long-deferred drilling programs. Among the liveliest spots in the state this spring will be The Pure Oil Company's new oil and gas field on Worland Dome in Washakie County, South Elk Basin, Park County, where Continental Oil Company is developing an important extension.

Colorado

Stanolind Oil & Gas Company has spudded 2 more wells headed for the Weber sandstone in Rangely field, Rio Blanco County. This gives Stanolind 9 wells now drilling. By mid-summer, Stanolind may have almost enough production of its own to fill the only pipe line outlet now serving the field, which is operated by Stanolind Pipeline Company for another Standard of Indiana subsidiary, Utah Oil Refining Company.

Stanolind has promised to install additional pumping stations in the near future which will lift the line's daily outflow to something like 32,000 barrels. However, the field's major operator, The California Company, now has enough production to fill the line at its proposed increase in capacity.

Oklahoma Allowable Hiked

An increase of 7475 barrels per day over the March allowable has been granted Oklahoma oil operators for April by the state Corporation Commission. The commission approved the recommendations of Walker T. Pound, conservation officer, for a total allowable of 367,000 barrels of oil a day for April. The allowable was the same figure forecast as demand by the Bureau of Mines, and at the commission hearing the Pound recommendations were hotly contested.

Chemical Session Set

Chemical developments in rubber and petroleum and their application to industry will be reported at the 109th meeting of the American Chemical Society in Atlantic City, N. J., April 8 to 12. Thirty-eight papers will be presented before the Society's Rubber Division, of which Dr. Willis A. Gibbons of the U. S. Rubber Company, New York City, is chairman.

Kansas Allowable

The State Corporation Commission of Kansas has approved the recommendation made by T. A. Morgan, conservation director, that the daily oil allowable for Kansas be set at 250,000 barrels for April, unchanged from March. The approval allocated 245,200 barrels a day to crude oil and 4800 barrels a day to natural gasoline.

☆ Canada

Sun Takes Out Reservation On Southern Alberta Plains

Sun Oil Company has taken out a reservation covering oil and gas rights underlying the "Gleichen Indian Reserve," on the Southern Alberta Plains midway between the City of Calgary and the Princess oil and gas area. The block covers about 175,000 acres. It adjoins to the south and west of the 500,000-acre reservation acquired by Sun from Canadian Pacific Railway a year ago.

Under direction of Geologist L. W. Storm, Sun is increasing its Alberta operations this year, with 2 seismograph parties starting to work April 1, compared with 1 party during 1945. A Canadian Exploration Company seismograph party, engaged by Sun, is now working the west end of the Indian reserve block, while a Sun party is engaged on the east end of this block.

Later this spring, the Sun party will move back onto the C.P.R. Reservation, of which some 300,000 acres were seismographed during 1945. The other party will move to a new area.

Shell Oil Company of Canada 16-14-J, Alberta Foothills test at Jumping Pound, has confirmed the Cardium sand marker at 6140 feet and, logging as expected, and averaging over 90 feet per day to date, is now making hole below 6500 feet. Located ⅜ mile southwest of Shell's 4-24-J "wet gas" discovery, the well is expected to reach its Madison lime objective around 500 feet deeper than the discovery, or about 10,100 feet.

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EXPLORATORY COMPLETIONS

CALIFORNIA WILDCATS

Kern County—Failures: Hancock Oil's Kaar 1, 26-29s-28e, N. E. Bakersfield area, abnd gray sd 7009.

Standard's K.C.L. 24 No. 37, 19-11n-22w, San Emidio area, brown shale 3750 ft, abnd 5152.

Solano County—Failure: Standard's Cal Packing Corp. 5, 24-5n-2e, Cache Slough area, Markley 3665 ft, Domengine 5463, Capay 5580, abnd 7020.

Kings County—Failure: Pacific Central's Finch 3, 36-23s-22e, Trico area, Top of Sand 2585 ft, abnd 3458.

Orange County—Failure: Pacific Butte Mining's 1, 13-6s-11w, Huntington Beach area, abnd 5059.

COLORADO WILDCAT

Pueblo County—Failure: Continental's Page 1, ne nw 6-18s-64w, abnd TD 6929.

ILLINOIS WILDCATS

Cumberland County—Failure: Nation Oil Co. et al's Phipps 1, ne sw nw 27-11n-7e, abnd 2141.

Edgar County—Failure: James I. Darst's Thornley 1, se se se 3-16n-11w, abnd 1035.

White County—Failure: R. J. Fryer's McClannahan 1, sw sw sw 28-4s-9e, abnd 3433.

INDIANA WILDCATS

Posey County—Failure: Mabee O & G's Oeth 1, se sw nw 20-7s-12w, abnd 2770.

Spencer County—Failure: H. L. Lambert's Jolly 1, sw nw se 34-6s-7w, abnd 1085.

KANSAS WILDCATS

Butler County—Failure: E. H. Adair's Brown 1, nw se ne 20-27s-7e, abnd 2782.

Ellis County—Failure: Darby & Bothwell's Glass 1, nw nw sw 30-11s-19w, abnd 3758.

Ellsworth County—Failure: Stearns et al's Diasbel 1, se se ne 3-15s-10w, abnd 4115.

Kearny County—Gas Discovery: Glenn Smith & Mid-Continent's Smalley 1, nw sw ne 3-25s-38w, 5 million cu ft gas, Krider 2385-2566 ft, td 4640.

Pawnee County—Failure: Huber & Ktowa Drlg's Barstow "A" 1, sw sw ne 32-22s-15w, abnd 4049.

KENTUCKY WILDCATS

Crittenden County—Failure: L & S Drlg Co.'s Collins 1, sw nw ne 16-K-20, abnd 1630.

Union County—Failure: Penn-Indiana Oil's Anderson 1 A, ne se ne 19-0-19, abnd 2758.

NORTH LOUISIANA WILDCAT

Caddo Parish—Oil Discovery: J. R. Querbes et al's A. J. Mitchell Est. 1, c nw nw 8-18n-16w, perf 60 shots 5895-5905 in Travis Peak, pump 15 bbls oil, td 6306.

NORTH LOUISIANA NEW PAY TEST

Concordia Parish—Lake St. John Deep Failure: Calif. Co.'s Applegate 7, 14-9n-10e, Massive sd 8895-89, anhy 12,135-360, sso 12,755-775, reperf 10,830-53, pb 8895, perf 130 shots 8830-40, flow 84 bbls 60-gr dist, 10/64-in. tp 3000 lbs, gor 14,000/1, td 12,846.

SOUTH LOUISIANA WILDCATS

Cameron Parish—Failure: Sohio's Mathilda Gray 1, 330 n 660 w of sec 12-15s-14w, abnd 12,448.

East Baton Rouge Parish—Failure: Sugarfield Oil's Jones Est 1, 44-6s-1e, abnd 9451.

Evangeline Parish—Failure: R. W. O'Meara's Price et al 1, 53-3s-2e, Wilcox 9927, Tate sand 9102-30, sso 10,271, 10,225, abnd 10,512.

Vermillion Parish—Failure: Phillips' Boullion 1, 29-12s-2e, abnd 1154.

MICHIGAN WILDCATS

Allegan County—Failure: J. F. Reed's Jones 1, nw nw nw 4-3n-13w, abnd 1705.

Gratiot County—Failure: McEvoy and Russell's Fisher 1, ne nw ne 25-11n-3w, Dundee 3245 ft, abnd 3270.

Van Buren County—Failure: Ford Oil Co.'s Goldsmith 1, s½ ne ne 10-1s--16w, abnd 1132.

MISSISSIPPI WILDCATS

Greene County—Failure: Humble's Harry Stover 3, nec 20-3n-7w, Wilcox 2320 ft, Eutaw 6732 ft, Massive sd 8238, abnd 8767.

NORTH TEXAS WILDCATS

Archer County—Failures: Bridwell Oil's DeBus 2, 900 ft snl and 750 ft wel w½ S.P. Ry. 2, A-1202, abnd 1901.

Bridwell's DeBus 3, 950 ft snl and 750 ft wel of w½ S.P. Ry. 2, A-1202, abnd 649.

C. Y. Gorman-Hedrick & Johnson's Parish 1, 450 ft out swc lot 1, sec 97, ATNCL sur, abnd 1613.

Baylor County—Failure: White Eagle Oil Co.'s McDonald 1, se se nw T&NO Ry. 148, elev 1309 ft, abnd 3157.

Jack County—Oil Discovery: Stephens Pet. Co.'s Jackson 1, 1181 ft snl and 1267 ft ewl W.C. Ry. 1, A-904, elev 1136 ft, Bend 4680, Marble Falls 5112, pump 4 bbls acidized 1500 gals Bend conglomerate 4717-27 ft, td 5253 ft, pb to 4875.

Jack County—Failures: Hanlon & Buchanan's Knox 2, 100 ft snl and 539 ft ewl of sw¼ S.P. Ry. 2, A-2202, abnd 630.

Hanlon & Buchanan's Munson 2, 233 ft n and 233 ft w of swc of J. Harmon sur A-1843, but in T.C. Ry. 1, A-2046, abnd 603.

Montague County—Oil Discovery: L. S. Youngblood & R. L. Foree's Benton 2, 3715 ft nsl and 6017 ft ewl Abel A. Lewis sur A-420, Caudle prospect and 2¾ mi s of Benson pool, elev 915 ft, Bend 6052, flowed 3132 bbls 43-gr, GOR 1500/1, natural via ¾-in, Bend conglomerate perf 6132-42 ft, td 6243.

Montague County—Failure: S. D. Johnson et al's Claude Willis 1, 660 ft s and 1320 ft e of swc of J. A. Hall sur A-1032, but in S. Cary sur A-1142, elev 1210 ft, Bend 6697, Marble Falls 7210, abnd 7404.

Wichita County—Failure: Akin-Dimock et al's Gibson 2-A, 200 ft snl and 600 ft wel blk 271, Waggoner Colony Lands, abnd 2008.

Young County—Failure: B. C. Gilmore's Oatman 1, 1100 ft snl and 150 ft wel TE&L Co. sec 1936, abnd 786.

NEW MEXICO WILDCAT

De Baca County—Failure: Francisco et al's Marshall 1, sw sw ne 7-3n-26e, abnd 605.

OKLAHOMA WILDCATS

Comanche County—Failure: Hambree & Rau 1, ne nw se 2-1s-11w, abnd 2391.

Cotton County—Failure: C. W. Smith et al's McAlister 1, sw sw nw 22-2s-10w, abnd 2240.

Garvin County—Failure: Cities Service's Hoffman 1, sw se nw 21-3n-1w, abnd 5300.

Lincoln County—Failures: Wilcox Oil Co.'s Seifert 1, se se nw 4-14n-6e, abnd 3020.

Wofford-Nicholson & Rose's Steger 1, se se se 3-15n-5e, abnd 2614.

Logan County—Failure: Eugen Jordan's Dean 1, nw nw ne 7-15n-1e, abnd 5401.

Okfuskee County—Failure: Davon Oil Co.'s Replogle 1, se se sw 17-13n-8e, abnd 2500.

Seminole County—Failure: Globe Oil & Refg's Norvell 1, ne sw nw 20-7n-7e, abnd 3312.

Stephens County—Failure: Continental's Wilson 1, se ne sw 28-2s-4w, abnd 5009.

WEST TEXAS WILDCATS

Pecos County—Failure: Standard of Texas et al's Tippett 1, c se sw GC&SF Ry. 46, blk 194, elev 2413 ft, anhydrite 660, Grayburg 1370, San Andres 1503, abnd 1533.

Ward County—Failure: Continental's Scott 1, 330 ft from se and sw lines of H&TC Ry. 33, blk 33, elev 2548 ft, anhydrite 1250, Delaware lime 4812, sand 4835, jkd and abnd 4920.

WEST TEXAS OUTPOST FAILURE

Yoakum County, Landon Field Outpost—Failure: E. J. McCurdy Jr. and McElroy Ranch Co.'s Baumgardner 1, 660 ft out NWc south 160 ac of PSL 12, blk L, 11/16-mi se of production, elev 3794 ft, anhydrite 2330, San Andres 4380, abnd 5100.

WEST TEXAS NEW PAY DISCOVERY

Ector County—Goldsmith Field Deep Pay Discovery: Stanolind et al's C. Scharbauer 3-Q, c ne sw PSL 12, blk A, north edge of San Andres production, elev 3159 ft, Yates 2670, San Angelo (Glorietta) 5080, Tubb 5870, base Permian 7630, Fusselman 7990, Simpson 8205, McKee 8565, Joins 8890, Ellenburger 8926, flowed 398 bbls 40-gr, plus 10 bbls bs&w, via ¼-in, acidized 5000 gals Clear Fork (Tubb) perf 6090-6185 and 6200-90 ft, td 9155 ft, pb to 6330.

TEXAS PANHANDLE WILDCAT

Collingsworth County—Failure: Humble's Scruggs 1, c ne ne H&GN Ry. 58, blk 19, elev 2011, Mississippian 5885, abnd 5988.

WEST CENTRAL TEXAS WILDCATS

Jones County—Failure: Dareso Oil Well Service's Bert Fields 1, 1650 ft snl and 330 ft wel T&P Ry. 48, blk 15, elev 1681 ft, abnd 2304.

Shackelford County — Failure: Gaston-Hungerford & Ferguson's Dyer 1, 660 ft nsl and 2440 ft ewl T&P Ry. 73, blk 12, elev 1530 ft, abnd 1251.

NORTH TEXAS NEW OIL PAY

Clay County—Heard Field New Pay Discovery: L. T. Burns et al's J. E. Ford 1, 467 ft out SEc ne¼ TE&L Co. sec 3221, ⅝ mi nw of Ellenburger discovery, elev 1121 ft, Bend 5751, Ellenburger 6535, which is 102 ft low and barren, flowed 560 bbls ½-in; cp 400-200 lbs.; tp 0-100 lbs; acidized 1000 gals Bend perf 5751-61 ft, td 6701.

EAST TEXAS WILDCATS

Bowie County—Failure: T. W. Murray et al's Fort 1, 700 ft nsl and 1350 ft ewl of Lemuel Peters sur, elev 383 ft, abnd 3018.

Hill County—Failure: A. R. Lewis et al's Cartwright 1, 940 ft from sw and 6900 ft from nw lines of E. Hart League, elev 545 ft, Austin chalk 276-575 ft, abnd 890.

McLennan County—Failure: Geo. Michael et al's Roberson 1, 1224 ft from m/w/s and 1920 ft from nw lines of C. J. Carrier sur, 1½ mi sw Lorena, elev 673 ft, top Austin 75, Eagle Ford 105, abnd 330.

Rusk County—Gas-Distillate Discovery: Delta Dr. Co.-The Chicago Corp.'s Rayford 1, 6825 ft ewl and 6000 ft nsl James Smith sur, A-709, elev 390, Georgetown 3270, Goodland 4210, Paluxy 4405, Glen Rose 4670, massive anhydrite 6085, flowed 13 bbls 61.3-gr distillate and 655,000 cu ft gas, or 52,000/1, natural via ⅛-in from Travis Peak perf (4 zones) 7310-7464 ft, td 7519 ft, pb to 7481.

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EAST TEXAS BORDER COUNTIES WILDCATS

Harrison County—Gas Discovery: Midstates' J. M. Bryson 1, W. R. Anderson sur, 2 miles s Waskom, Travis Peak 5827-6162, perf 5576-5610, flow 11,500,000 gas open, 8 million gas open fr Pettit, td 6243.

Shelby County—Gas Discovery: Humble's Pickering Lbr. Co. 1, St. Francois sur, Austin chalk 2770-3149, Comanche lime 3204, Paluxy 3404, U. Glenrose 3700, Cotton Valley 9405, perf 132 shots 6606-28, flow 1,836,000 gas, 3/16-in td 10,986, pb 8174.

SOUTH CENTRAL TEXAS WILDCATS

Bexar County—Failure: Harry S. Stahl's R. Gastring 1, 1200 fr nl 330 fr el 126-ac lse, M. Montoya sur, in lot 66, Edwards lime 1714, abnd 1720.

Guadalupe County—Failure: United North & South Dev. Co.'s Mrs. Cora Mackey 1, 660 fr wly nel 935 fr ely sel 175-ac tr, 3 mi e Darst crk, 2 mi sw Day fld, chalk 2065, Buda lime 2720, Del Rio 2815, abnd 2820.

SOUTHWEST TEXAS WILDCATS

Starr County—Failure: Baldridge & King's Yturria Ld. & Livestock Co. et al 1-A, 467 fr el sh 320 467 fr el 2333 fr nl 160-ac lse, e½ porc 100, 1 mi nw Sullivan City fld, abnd 5503.

Webb County—Failure: Edwin B. Cox-Jake L. Hamon's Clyde C. Marshall 1, 330 fr ne&sel lot 2, E. J. Foster sbdn, on 442.4-ac lse, abnd 2620.

LOWER TEXAS COAST WILDCATS

Bee County—Failure: Magnolia's E. H. Buckner 1, 1259 fr nl 3356 fr el 2311.8-ac. lse, Thos Simmons sur, flow 20 bbls 56.5-gr dist fr 10,370-404, flow 14 bbls 54.5-gr dist, Vicks 3214, Hockley 3905, Yegua 4900, Cook Mt. 5535, Carizzo 9820, temp abnd in Wilcox 10,561.

Brooks County—Failure: Sun's Mary M. Lasater 3-B, 875 fr s&el GB&CNG sur 331, 799-ac lse, abnd 4899.

Live Oak County—Failures: Altex Well Servicing Co.'s Schmid Heirs 1, 330 fr wl 2310 fr sl 640-ac lse, Sam Owen sur 132, abnd 1736.

H. E. Dirks et al's Frank E. Boiss 1, 467 fr ne&sel 530-ac lse and H&GN sur 1, abnd 4255.

San Patricio County—Failure: Sullivan & Garnett's D. Zwief 1, 330 fr ne&nwl blk 1, Sect 53, on 434.7-ac lse, abnd 5940.

Victoria County—Condensate Discovery: Sterling O&R Corp.'s J. J. Welder 2, 1460 fr nwl 1820 fr nel S. A. Belding sur, on 640-ac blk, 11,371.89-ac lse, pay 5690, perf 120 shots 5690-5710, flow 40 bbls cond, 1,700,000 gas, ⅛-in, td 5750.

LOWER TEXAS COAST NEW PAY TESTS

DeWitt County—Yoakum Oil Discovery: Pure's A. F. Karl 1, 660 fr ne&sel 78.33-ac lse, John May sur, 78.33-ac lse, ½ mi s of Rice 1, gas-cond disc, perf 9 shots 8663-65, flow 38 bbls 37.6-gr oil, 52% wtr, ⅛-in, gor 20,868/1, td 11,334, pb 8667.

Nueces County—N. Minnie Bock Oil Discovery: Atlantic's Jas. H. Ewing 2, 660 fr sl 2970 fr wl sect 46, 219-ac lse, M. Lopez de Herrera Gr, pay 6218, perf 40 shots 6229-35, flow 188.33 bbls 37.5-gr, 5/32-in, gor 1364/1, td 8495, pb 6240.

UPPER TEXAS COAST WILDCATS

Harris County—Failure: J. K. Dorrance's Alice Myer 1, 1613-ac lse, W. Francis sur, Cypress area, abnd 7501.

Liberty County—Failure: Roxie Wright's Mrs. Martha Davis 1, nw flk N. Dayton fld, 108-ac tr, H&TC sur, sect 121, abnd 5180.

UPPER TEXAS COAST OUTPOST

Colorado County—Sheridan E. Extension: Grubb & Hawkins-Lone Star Prod. Co.'s Ruth E. Powers 1, 330 fr nl 660 fr wly/wl 574-ac lse, Mrs. S. W. Granett sur, dual comp: "L" sand 10,130, perf 1280 shots 10,135-365, flow 145 bbls 59.4-gr, 2,342,000 gas, cp 1970 lbs; "Q" sand 9318 perf 240 shots 9320-70, flow 32 bbls 49.3-gr, 3,252,000 gas, tp 3465 lbs, td 10,456.

UPPER TEXAS COAST NEW PAY TESTS

Harris County—Tomball Discovery: Humble's Ed. F. Milo et al 10, 213.27-ac lse, C. N. Pillot sur, pay 6146, perf 78 shots 6146-59, flow 38.2 bbls 51.8-gr dist, ¼-in, gor 81,500/1, tp 2250 lbs, td 15,542.

Matagorda County—Sugar Valley Discoveries: Superior-J. H. Blaffer's Sadie E. Thomasson 1, 66-ac tr, P. Burnett-A. Sojourner Lge, 5000 ne Peterson 1 disc well, "T" sd new pay 9083, perf 19 shots 9083-86, flow 422.56 bbls 35.4-gr oil, 193,000 gas, tp 1325 lbs; "C" sand new pay 8761-86, perf 60 shots 8762-72, flow 71 bbls 55.7-gr oil, 3,720,000 gas, cp 3070 lbs, td 10,100.

Communications Session

The Petroleum Industry Electric Association, composed of telephone and telegraph officials of the gas and oil pipe lines of the United States, will hold its first postwar convention in Tulsa, May 7, 8, and 9. The program will emphasize advancements in radio and air communication made during the war.

The OIL WEEKLY'S TRADING POST

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5500′—4½″ Range II, 16.16-lb., full hole drill pipe
1—Emsco power pump, 7¼x14 with GAK Wax. engine, new
1—6¾x14 Gardner-Denver power pump w/ XHE Hercules motor, overhauled
1—Hopper 3C Drawworks
1—XHE Hercules motor, overhauled
1—Rotary table, Emsco oil bath, R. B. completely reconditioned
1—Emsco coring unit with Lincoln motor
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2—Sets Baash-Ross tongs, complete, late model, all lugs up to 10¾
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All tools, accessories to make complete rig ready for service. This rig can be inspected in my yard in Alice, Texas. Phone 619, 620 or 1169-W. **Harry B. McCartney.**

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■ FOR SALE: A medium size Austin Trencher A-1 shape, Crawler Type. $1,285. Write or apply in person to Mr. Roy Hofacker, Route 1, New Paris, Ohio.

FOR SALE

1—Ideco steel rig front with Ideco sand reel and Ajax 12x12 single cylinder steam engine
1—Werme steel rig front with Parkersburg sand reel
2—12″x12″ Ajax open type single cylinder steam engines
1—12″x12″ OSW open type single cylinder steam engine
1—14″x7¼″x18″ Wilson-Snyder duplex steam pump
1—14″x7¼″x14″ Johnson duplex steam pump
1—OWS feed water heater pump
1—Cadillac motor
4—Werme 87′x20′ base steel derricks with steel floor sills
2—10″x10″ OWS twin steam engines oil bath
2—Sets unitized bull wheels 12″x8′ Brake wheel, 8′ double tug, 16″ shaft
2—1″ rotary drilling lines. 1—1250′, 1—850′ (good condition). **Moran Bros., Inc.,** 350 Allison-Duncan Bldg., Wichita Falls, Texas.

■ FOR SALE: 13,500′ 4″ OD 15.70-lb. Youngstown Grade "D" Drill Pipe with 4″ Hughes Full Hole Unitized Type "C" Tool Joints, 5⅛″ OD 2-13/16″ ID Hard Faced Flash Weld Tool Joints. This Pipe Located at Hughes Plant, Houston, Texas. French Tool & Supply Company, Box 2288, Phone 1493, Odessa, Texas.

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■ Graduate Chemical or Mechanical Engineer with experience in gasoline or recycling plant. Give age, experience and educational qualifications in first letter. Address: Box 14, c/o The Oil Weekly, Houston, Texas.

SITUATION WANTED

■ WANTED: Production job with progressive independent oil company. Six years experience with flowing, jetting and pumping wells with major oil companies. Prefer high climate. Four years college. Thoroughly experienced with production reports, gas/oil ratio test and high pressure. Address: Box 11, c/o The Oil Weekly, Houston, Texas.

■ OIL SECRETARY—MALE: B.B.A. degree, 150 words per minute shorthand, 70 typing speed, accurate transcription. Competent and experienced as assistant to oil executives. Excellent background and practical knowledge various phases of oil business—land and leasing, geology, petroleum engineering, production, pipelining and marketing. Capable and desirous of shouldering responsibilities. Box 17, c/o The Oil Weekly, Houston, Texas.

■ Position Wanted: Veteran, graduate geologist, service experience in electronics. Wants Permanent Location. Address: Box 16, c/o The Oil Weekly.

■ Veteran, graduate Petroleum Engineer, 32, seven years experience as driller and petroleum engineer. Desires position with headquarters in Houston. Address: Box 13, c/o The Oil Weekly, Houston, Texas.

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WILDCAT STARTS

ARKANSAS

Ouachita County: Hunt Oil's J. H. Dawson 1, c nw nw 14-15s-18w, lcn.

CALIFORNIA

Kern County: Bender Oil Operations' Seaboard 1, 22-28s-28e, Kern River area, ru.

G. B. Finch Oil Co., Ltd.'s Tejon 6, 29-12n-18w, Comanche Point area, rig.

Gene Reid Drilling Co.'s Lorraine 1, 2-28s-27e, Kern Front area, lcn.

Richfield's M & L Fee No. 1, 18-29s-21e, Temblor area, lcn.

Tulare County: Shell, Inc.'s Sunnyvale Community 14-1, 29-23s-26e, Sunnyvale area, lcn.

Solano County: Standard's Kirby Community 1, 24-4n-1w, Kirby Hills area, ru.

Yolo County: Standard's Natural Gas Corp.-Du Bois 1, 28-11n-1w, Dunnigan Hills area, lcn.

ILLINOIS

Bond County: Continental's Oestringer 1, se se nw 31-4n-4w, drlg.

Clinton County: C. R. Winn et al's Treffert 1, nw nw nw 15-2n-1w, lcn.

Crawford County: J. W. Rudy's Newton 1, s2 sw ne 30-7n-11e, lcn.

Cumberland County: Everett Connelly's Carroll 1, ne se se 24-10n-9e, drlg.

Hamilton County: Magnolia's Boyles 1, ne sw se 7-5s-5e, lcn.

White County: New-Penn Dev Corp's Pottorff 1, ne ne nw 20-3s-9e, lcn.

KANSAS

Barton County: Raymond Gear's Axman 1, ne ne ne 14-17s-15w, rur.

Rooks County: Brunson & Martin's Jones 1, ne ne ne 3-6s-19w, lcn.

Tom Palmer's Lorbeer 1, sw sw sw 28-7s-19w, lcn.

Stafford County: Coralena's Gray 1, sw ne ne 11-24s-13w, rur.

SOUTH LOUISIANA

St. Bernard Parish: Texas' State-Chandeleur South 2, state lse 335, 18,200 w fr Dry Hole 1, in Chandeleur Sound 4-6s-5e, 5000-ft test.

NEW MEXICO

Eddy County: Potash Company of America's Edith Riggs 1, c se ne 22-21s-23e, lcn 4000-ft pre-Permian test.

MICHIGAN

Mecosta County: Mich. Consolidated Gas Co.'s Rogers 1, c se 2-13n-9w, dr.

Van Buren County: J. W. Lang Co.'s pineau 1, nw nw sw 11-1s-16w, dr.

MISSISSIPPI

Clarke County: Sun's Longbell Petroleum Co. 1, approx 7-2n-17e, lcn.

MONTANA

Big Horn County: MacKinnie Oil & Drilling Co.'s Douglas 1, c sw ne 23-1s-34e, Nine Mile area, dr. 700 ft.

OKLAHOMA

Lincoln County: N. V. Duncan et al's Reid 1, se sw nw 10-16n-2e, lcn.

Jefferson County: Bridwell O & G's Brett 1, sw sw ne 15-6s-6w, drlg.

Stephens County: T. H. McCasland's Payne 1, sw se se 19-1n-5w, lcn.

WEST TEXAS

Glasscock County: C. T. McLaughlin et al's A. D. Neal-Shell 1, 1980 ft snl and 584 ft wel T&P Ry. 48, blk 33, T-3-S, lcn 3050-ft San Andres test.

Shell's L. C. Clark 1, 1960 ft nsl and 1986 ft ewl T&P Ry. 5, blk 32, T-4-S, lcn 10,500-ft Ellenburger test.

Tom Green County: Harley Sadler et al's Bob Mins 3-80, 1500 ft wel and 330 ft nsl H&TC Ry. 80, blk 6, lcn 2000-ft cable test.

WEST TEXAS WILDCAT DEEPENING

Andrews County: Humble's H. O. Sims 1, c nw ne PSL 24, blk A-29, elev 3495 ft, deepening from Permian cherty-lime at 9440 ft to 11,000 ft.

WEST TEXAS OUTPOSTS

Yoakum County: John W. Murchison et al's E. E. Kirkpatrick-Sun 1, 660 ft wel and 670 ft snl sec 66, blk D. J. Gibson sur, 2 mi s of Landon field, lcn San Andres test.

Gaines County: B. H. Nolen et al's J. O. Jones-Stanolind 1, c sw sw D&W sur 2, blk H, 2 mi n Cedar Lake field and ½-mi e of depleted pumper, sp. on 5000-ft San Andres test.

WEST CENTRAL TEXAS

Jones County: C. C. & J. V. Howell et al's G. M. Gillespie 1, se se sw sec 45, Orphan Asylum Lands sur, lcn 2500-ft cable test.

NORTH TEXAS

Archer County: S. F. Hutcheson et al's Harris 2, 150 ft wel and 1400 ft nsl blk 60, J. W. Harris subdiv, lcn 1425-ft rotary test.

Young-Kelleher & Timberlake's J. M. Powell 1, 1065 ft e and 150 ft n of sec blk 141, J. W. Harris subdiv, but in Hrs. of Rachel Storey sur A-373, 1400-ft test, sd 600 ft.

Baylor County: C. G. Hart et al's M. & L. Howe 2, 150 ft s and 150 ft w of nwc of sec 1, A-1009, but in sec 20, Daniel S. Ward sur A-560, lcn 300-ft cable test.

Cook County: Standard of Ohio's Ralph Breeding 1, 1088 ft snl and 903 ft ewl of J. Hawkins sur A-497, lcn 3100-ft rotary test.

Grayson County: Homer W. Snowden et al's A. M. Bryant 1, 1768 ft s and 1060 ft w of nwc of A. Hilburn sur 494, but in E. M. Jones sur 623, lcn 6000-ft Ellenburger test.

Jack County: Hanlon & Buchanan's W. M. Crowley 2-E, 620 ft snl and 233 ft wel S.P. Ry 1, A-579, sd 608 ft.

Hanlon & Buchanan's H. P. Briley 2-A, 1633 ft snl and 233 ft ewl of B. C. Finley sur A-222, lcn 1000-ft rotary test.

Montague County: Continental Oil Co.'s Lynn Garlington 1, 990 ft out nwc 145-ac tract, or 990 ft ewl and 1900 ft snl TE&L sec 3422, lcn 7600-ft Ellenburger test.

Wilbarger County: National Associated Pet. Co.'s C. Schmoker 1, 330 ft snl and 660 ft ewl of ne H&TC Ry. 111, blk 14, lcn 5500-ft Ellenburger test.

Young County: Henry Craig et al's Dr. J. P. Lovett & Baldwin 1, 450 ft snl and 783 ft wel of nw¼ TE&L Co. 207, lcn 1000-ft rotary test.

Anzac Oil Corp.'s M. K. Graham 1-D, 6200 ft ewl and 3407 ft nsl fraction section C, TE&L Co. 3410, lcn 4500-ft test.

Mudge Oil Co.'s Deats & Touchstone 1, 852 ft snl and 1817 ft wel of lse, J. C. Cothan sur A-1400, lcn 4500-ft test.

Timberlake & Kelleher's Bryant-Rose & Hamilton 1, 3370 ft s and 507 ft e of nec TE&L sec 1369, but in TE&L Co. sec 3401, fraction D, lcn 1050-ft cable test.

EAST TEXAS

Smith County: Ed. Pace et al's R. E. L. Johnson 1, 482 ft snl and 451 ft wel of north 40 ac of 50-ac tr, Andrew Kent sur, 4 mi sw Mount Sylvan, rur for Paluxy test.

Wood County: W. F. Bridewell-Bobby Manziel et al's J. B. Coker 1, 400 ft ewl and 450 ft nsl of 80-ac tr, and Wm. Clark sur, &-mi n of Crow, 7500-ft Paluxy test, rur.

SOUTH CENTRAL TEXAS

Bandera County: Ray E. Pool's E. L. Rainey 1, 467 fr ne&nwl s¼ GH&SARR sur 16, 2½ mi e of Woodtex's Clayton 1 dry hole, ru 5000-ft test.

SOUTHWEST TEXAS

Jim Hogg County: F. A. Callery et al's Julian Vela Pena et al 1, 330 fr s&el blk 17 and 40-ac lse, M. W. White sbdn sh 3, El Pyote Gr, 3500-ft test.

Starr County: Baldridge & King's I. Y. Garcia et al 1, 1830 fr nl 330 fr el 160-ac lse w½ porc 100, 1½ mi nw Sullivan fld, dr 300 on 6000-ft test.

Sun's Marrs McLean 7, 330 e of wl 1252-ac lse in porc 79&80, in Juan Casheras porc 79 nw of Lockhart prod, 4000-ft test.

Webb County: Chicago Oil's A. M. Bruni 1, 660 fr s&el sur 600 on 640-ac lse, 1600-ft test.

Houston Oil's Rosa Benavides et al 1, 330 fr s&wl blk 9 Cole sbdn, 2727 fr wl 2225 fr nl GC&SF sur 411 on 655-ac lse, mi 8500-ft test.

LOWER TEXAS COAST

Jim Wells County: Ralph E. Fair-Dan Auld's Reynolds & Richardson 1, 330 fr s&wl lot 19, W. O. Staples sur 210, 6500 nw Magnolia City fld, nearest prod, mi 6000-ft test.

Nueces County: H. R. Smith-W. C. McBride's Clara Driscoll 1, 467 fr w&nl 448.18-ac lse, in nwc Jose A. Cabasos sur, ¾ mi e ne Brayton fld, 1 mi w sw Gandy fld, 8500-ft test.

UPPER TEXAS COAST

Austin County: Pure's Willie Stepan 1, 183-ac tr out of 239.03-ac lse, E. M. Kuykendall sur, 3½ mi se Brennam Dome, 9000-ft Wilcox test.

Waller County: George W. Strake et al's A. E. Humpries 1, 660 fr sl 1050 fr wl 1000 fr el 1944-ac lse, John N. Pierson sur, 11,000-ft test.

WEST VIRGINIA

Breckinridge County: F. Douthitt's Allen 1, ne se se 3-P-35, lcn.

WYOMING

Sweetwater County: Transcal's Capper No. 1, sw sw nw 12-19n-104w, North Baxter Basin area, lcn.

Geologists Aid Veterans

The Pacific Section of the American Association of Petroleum Geologists has announced the organization of a Veterans Placement Committee to aid returning geologist-veterans in obtaining employment and to bring these veterans in contact with employers who might be in need of technical men.

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•

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SQUEAKS from the BULL WHEEL

Life Is Like That

She refused his kiss in tones so meek
And his chest did swell with pride.
But when she showed him her technique
He knew darn well she'd lied.

Father's Failing

"I've been afraid of firearms all my life."

"Why, was your mother scared by a gun?"

"No, but my father was."

Sad Situation

"From what part of your body did they take the skin grafted on your face after you were burned?"

"I dunno, but the other night when I got home after a hard day, I suddenly sat down on my face."

Short Story

Gypsy Rose dressed very thin,
Gypsy Rose sat on a pin,
Gypsy Rose!

This Curious World

And then there were the two nudists who quit going together because they thought they were seeing to much of each other.

Time tells on a woman—especially a good time.

She wears the sort of evening gowns that keeps everybody in the place hot except her.

The worst thing about history is that every time it repeats itself, prices go up.

An advertising man's prayer: "And give us this day our daily golden crust, slo-baked, vitamin-enriched bread."

Wolf's motto: Let us prey.

We can't see what keeps the gals from freezing—but then we're not supposed to.

Silly Boy

Two drunks sat on the curb meditating. One spoke:

"Watsch your wife shay when you shtay out late like thish?"

"Haven't got a wife."

"Then whatsch idea of shtaying out so late?"

It's a Young World

"Just think, some of these ruins are 5000 years old."

"Say, I'm not that dumb."

"Don't you believe they are 5000 years old?"

"How could they be—it's only 1946."

Acrobatic Appetizers

"So counting sheep didn't put you to sleep last night?"

"No, with lamb chops at their present price it was a pleasure and kept me awake!"

The Beginner

"I see you're closing your eyes when I kiss you. What'll you do next?"

"Yawn."

Poet's Nook

Who says that Mother Nature
Failed to do her bit?
She never made a guy and gal
with lips that didn't fit.

Encore

You've wolfed and won,
Congratulations!
Now try to bear,
Your wife's relations!

Encore Some More

Despite the stories you may hear
Of gals who must wear glasses,
The wolves will take a second look
If she's got a classy chassis.

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Wildcats or Field Logs
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Texas or Louisiana Gulf Coast
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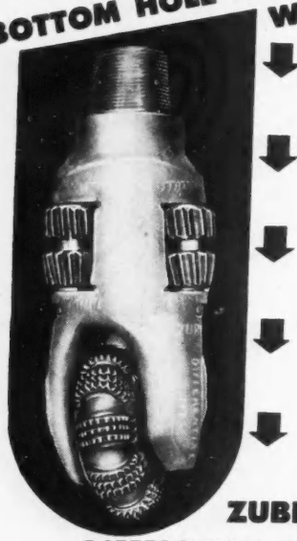

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MEN IN THE INDUSTRY NEWS

J. A. BERMINGHAM, division manager of the South Texas Division, producing department of The Texas Company, has retired but is being retained for the time being as a consultant on the staff of the manager of the

William C. Kneale

J. A. Bermingham

producing department. **WILLIAM C. KNEALE** has assumed the post of acting division manager, with Houston headquarters. Bermingham entered the oil business upon the discovery of Spindle Top in 1901, having been connected with a company having production in the field. He was subsequently an independent operator until 1928, when he joined The Texas Company, which he has served as assistant division manager of the West Texas division; vice president and general manager of The Texas Production Company, Texas subsidiary; vice president of The Texas Company of California in charge of production; and manager of the South Texas Division. Kneale joined the company in 1923 and has served as assistant geologist in the Rocky Mountain Division, petroleum engineer and geologist in the West Texas Division, member of the Oklahoma-Kansas Division, Illinois district superintendent, general superintendent in charge of operations in Illinois, Indiana, Kentucky, Ohio and other eastern states, and assistant division manager.

* * *

GEORGE F. RUSSELL, JR., has been appointed associate professor of petroleum engineering at Louisiana State University. Russell is a graduate of the University of Oklahoma, having received both his bachelor and masters degree in chemical engineering. He will be in charge of the natural gas section. In addition to his teaching work, he is doing private consulting on plant design and technical service on special problems.

* * *

R. J. GILL has been transferred to Wichita, Kansas, as a geologist for The California Company and assistant to **JULIAN L. LOW,** district geologist. Gill takes the position left vacant by the transfer of **WALTER WOLF** to Denver, Colo.

* * *

ART RAY, division superintendent of Gulf Refining Company at Tulsa, has been elected president of the Tulsa Optimists Club.

* * *

JEFF A. ROBERTSON, chairman of the State Corporation Commission of Kansas before entering the Army in 1943, has been released from the service and will resume his post about May 1, replacing **RICHARD B. McINTIRE.** The latter was attorney for the commission before being appointed chairman. He will enter private law practice.

* * *

JAMES MOSIER, geologist for Sun Oil Company at Tulsa, is temporarily stationed at Amherst, Nova Scotia, where he will direct work on a second test well to be drilled near Amherst by Sun in an attempt to open production in the Chester zone of the Mississippian. The first well was lost at 6001 feet.

* * *

GORDON LOUD has been named Middle East representative of The Atlantic Refining Company, with headquarters in Cairo, Egypt. Loud, an archeologist, was recently released by the Office of Strategic Services in Washington where he served in a civilian capacity during the war. He joined the company February 6 and is now en route to Naples and Alexandria with his family to begin a survey of petroleum activities in the Middle East.

* * *

CLIFFORD P. BOWIE, who has been supervising engineer of the United States Bureau of Mines, Petroleum and Natural Gas Office and laboratories at San Francisco, retired from government service March 31.

DANIEL B. GREENE, West Texas scout for Magnolia Petroleum Company, has been transferred from Midland to Duncan for duty in the South Oklahoma district.

* * *

LOUIS MICHELSON, geologist for Skelly Oil Company, has been transferred from Wichita, Kansas, to the West Texas-New Mexico district with headquarters at Midland.

* * *

DAN RAWLS, who served in the Army, has rejoined Magnolia Petroleum Company's scouting staff and assigned to the Amarillo district.

* * *

JACK M. CAMPBELL, Albuquerque attorney, has been appointed executive secretary of the New Mexico Oil & Gas Association, succeeding the late **HUGH L. SAWYERS.**

* * *

PAUL PLUMER, who served in the Navy while on leave from Magnolia Petroleum Company, has reported as a scout in the East Texas district with headquarters at Tyler.

* * *

JACK MINISH, geologist who was recently relieved from military service, has returned to Stanolind Oil & Gas Company's Midland, Texas, district staff.

* * *

J. EDWIN DUNBAR, who served with the Army Engineers in the ETO has rejoined Magnolia Petroleum Company as scout in the Jackson, Miss., district.

* * *

JOHN E. GAFFNEY, geologist for Lion Oil Company, has been transferred from Midland, Texas, to the company's headquarters at El Dorado, Ark.

* * *

E. C. SCURLOCK, president of Scurlock Oil Company, **D. E. FARNSWORTH** and **CLAUDE B. HAMILL,** all of Houston, have organized the Eddy Refining Company with paid-in capital stock of $30,000. Headquarters are in the Bankers Mortgage Building, Houston.

* * *

HOWARD WADDIE, engineer for McKamie Gas Cleaning Company, Magnolia, Ark., since 1941, has been named manager of the plant, succeeding the late **ROGER A. HOWE.**

* * *

HENRY H. BEESON, Shreveport, vice president of the Sabine Valley Gasoline Company, has resigned to become assistant manager of the natural gas department for Magnolia Petroleum Company, Dallas. **F. E. WIMBERLY** succeeds Beeson as vice president and director of the Sabine Valley Gasoline Company. **C. E. RAY,** secretary-treasurer, also has been elected a director.

* * *

R. A. RAYNE, returned from three years in the Air Corps, has been promoted by United Gas Line Company to district clerk in its district offices at Jackson, Miss. **HERMAN FRAZIER,** formerly district clerk at Jackson, has been promoted to section head of the Shreveport general office construction accounting department. **H. C. GOODRICH,** former Dallas district engineer, has been transferred to the general office engineering section, and **A. H. McDONALD,** former district engineer in the Southwest Louisiana district, has moved to the general office main pipe line department as gas engineer. McDonald will be replaced in the Southwest Louisiana district office by **R. E. OXFORD,** who has been engineer in the Shreveport general office.

* * *

M. L. MARGENAU has been made director of public relations for Cities Service Oil Company, succeeding the late **R. J. DAUGHERTY.** Margenau became associated with Cities Service in 1917 after graduating from the University of Wisconsin with a degree of bachelor of science in electrical engineering. He was transferred to Empire District Electric Company, a Cities Service utility headquartered at Joplin, Mo., and in 15 years worked up from a construction job to assistant general manager. After a year as special assistant to the manager of Toledo Edison Company, another Cities Service utility firm, he joined the staff of Petroleum Advisers, Inc., technical and coordinating unit of Cities Service petroleum and natural gas pipe line subsidiaries, and was in charge of numerous surveys, valuation and rate studies for Cities Service, Empire Pipeline Company and Cities Service Gas Company.

M. L. Margenau

JOHN R. RAMSEY and **SOL H. KAUFFMAN**, veteran members of the legal staff in The Texas Company's Tulsa office, retired April 1 under the company's retirement plan. Ramsey was born in Aledo, Ill., and went to Tulsa in 1906 and served a number of years

John R. Ramsey

Sol H. Kauffman

as city attorney and county judge before joining the company in 1916. He has served as chief attorney for the company in Oklahoma and Kansas since 1920. Kauffman, born in San Antonio, went to Tulsa in 1918. He joined the legal staff of the company in 1922. His specialty is title work and he is a recognized authority on Oklahoma and Kansas titles. **WALTER E. WILL**, in charge of The Texas Company's legal office at Mattoon, Ill., will fill one of the vacancies resulting from the retirements.

* * *

D. R. SMITH has been named manager of the Ponca City, Okla., sales office for Oil Well Supply Company, replacing **JAMES A. HILL**, newly appointed manager of the Colorado-Wyoming district.

* * *

JACK B. ROBERTS, Cisco operator, has been elected president of the West Central Texas Oil & Gas Association, succeeding **JOSEPH WEAVER** of Eastland. **JOHN P. BYRAM** of Abilene and **J. F. WEST** of Stamford, were chosen vice presidents, while **LLOYD W. HOLDER** of Breckenridge will be secretary-treasurer.

* * *

PAT DUNCAN, former chief scout for Magnolia Petroleum Company and a landman when he joined the Navy in July, 1942, has discarded his lieutenant-commander's uniform to become assistant landman for the West Texas-New Mexico district with headquarters at Midland.

* * *

SAMUEL K. BOTSFORD and **PETER C. JENSEN** have been appointed assistant secretaries of Standard Oil Company (Indiana). They fill vacancies created by the promotion of **L. E. HARMON** to secretary and by the recent death of **W. C. EWALD**. Botsford joined the company's Chicago sales division in 1920 and was transferred to the Chicago general office as a member of the sales accounting department in 1924. He became assistant to the assistant secretary in 1936 and administrative secretary in 1945. Jensen joined the company in 1925 in the general office sales accounting department, where he was a specialist in tax matters. He attended the John Marshall Law School in Chicago and was admitted to the Illinois bar in 1943. He became assistant to the secretary in 1945.

* * *

GEORGE F. RACETTE has resigned as vice president and director of the Bareco Oil Company, Tulsa, to organize the United Tire and Accessories Company.

* * *

RAY POOLE, an oil man since 1923 with practical experience in drilling, producing, refining and sales, has been appointed manager of the foreign service department for Security Engineering Company, Inc. In 1925 he went to Colombia for Tropical Oil Company and spent four years in that area. He is scheduled to make an extensive tour of all fields in Mexico and South America and will return to Los Angeles about July. His trip will include Colombia, Venezuela, Trinidad, Brazil, Bolivia, Peru and Ecuador.

Ray Poole

DR. W. P. JENNY, consulting geologist and geophysicist, will be in Europe during the summer but plans to be back in his Houston office by the end of August.

* * *

WILLIAM H. FARRAND, vice president of American Overseas Petroleum Company, who headquarters in San Francisco, left recently for a two-months' inspection trip of his company's properties in the Near East.

* * *

LESTER B. ROBERTS has been discharged from the Army with the rank of major and has rejoined Ethyl Corporation as manager of the new General Research Services Section of the Engineering Laboratories.

A. A. MOODY, after more than half century with Jarecki Manufacturing Company in St. Louis, as general manager of branches, retired from active service April 1. He will maintain offices in that city in a consulting capacity.

* * *

P. A. ALERS, who has been associated with Worthington Pump and Machinery Corporation since 1933, has been appointed manager of the El Paso, Texas, office.

* * *

R. K. BAKER, recently discharged from the Marine Corps, has resumed his duties with Petroleum Rectifying Company's construction department at Long Beach, Calif. He served 18 months in the Marshall Islands and Marianas campaigns, and was wounded at Guam. Hospitalized for six months, he was awarded the Purple Heart and the Naval Unit Citation. **JAMES R. EVERETT** has rejoined the company after two years in the Navy.

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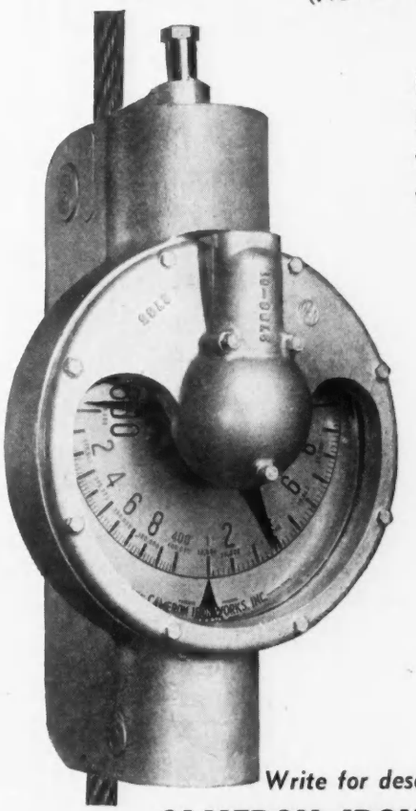

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WEIGHT INDICATOR

MEN IN THE INDUSTRY NEWS

DR. PHILIP S. SMITH, chief Alaskan geologist, retired March 31 from the Geological Survey of the U. S. Department of the Interior. As head of the Survey's Alaskan Branch since April 1, 1925, Dr. Smith has guided the branch's activities through many critical years in the history of the territory. He is the recognized authority on the mineral resources of Alaska and his intimate knowledge of the geography, geology, climates, people, and general problems of the territory has been used many times by the Department of Interior and by Alaskans.

• • •

E. J. LOUDEN, Baroid Sales Company, Houston, is on a three-week business trip to Venezuela.

LELAND BRECKENRIDGE, secretary of the American Association of Oil Well Drilling Contractors, spoke before the Houston Chapter, National Association of Cost Accountants.

• • •

DR. ROY MORSE, GEORGE L. NYE, and **HARRY C. SPOOR** will discuss "Aspects of Oil and Gas Valuations" at the April dinner meeting April 9 of the Gulf Coast Section of AIME.

• • •

E. B. (EDDIE) HEARN, directional drilling operator for Houston Oil Field Material Company, Inc., has been transferred to New Iberia, La., where he will be in charge of directional drilling for the Louisiana-Mississippi district. **F. R. STRAPP** will also be located in New Iberia, and will work with Hearn.

Deaths

W. H. FRANCIS of Dallas, retired vice president and general counsel, Magnolia Petroleum Company, died April 3. Francis joined Magnolia in 1918 as assistant general counsel and two years later was made vice president and general counsel. He retired in 1939.

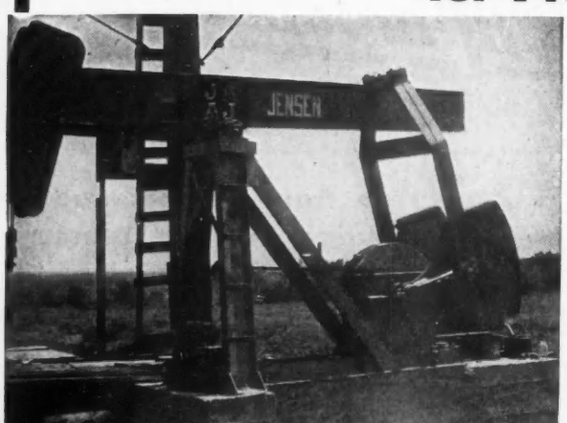
• • •

EDWARD C. SKAER, 76, Wichita, Kansas, former prominent Kansas oil man, died March 28. He formed the Skaer Oil and Gas Company a number of years ago and developed the first gas well in Butler County, Kansas. After his company was sold with all its holdings to the Empire Company, Skaer entered the real estate business in Wichita.

• • •

ROBERT HENDEE SMITH, 30, was killed in an automobile crash near Delhi, La. Smith had been employed as a geologist by The Texas Company in Jackson. He studied at Princeton University and was a graduate of Louisiana State University. He was a member of the Mississippi Geological Society.

An Idea for Producers



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But do you? It has taken us 26 years to find out what we know about them. Here's an idea, a suggestion:

From time to time at your convenience, talk with JENSEN owners and men who look after JENSEN-equipped wells. Draw them out. They aren't selling JENSEN Units, you know. But they will, if you don't watch 'em! These men know from their own experience that a JENSEN is likely to make any well more profitable, more satisfactory.

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THE OIL MAN'S CALENDAR

APRIL 8–10	Mid-West Gas Association, Annual Convention, St. Paul, Minn., St. Paul Hotel.
11–12	Pacific Coast District, Production Division API, Spring Meeting, Los Angeles, Biltmore Hotel.
11–13	Interstate Oil Compact Commission, Quarterly Meeting, Tulsa, Hotel Tulsa.
17–19	Natural Gasoline Association of America, Annual Convention, Dallas, Baker Hotel.
18–19	National Petroleum Association, Semi-Annual Meeting, Cleveland, Ohio, Hotel Cleveland.
29–30	And May 1, Independent Petroleum Association of America, Mid-Year Meeting, Houston, Rice Hotel.
May 7– 8	American Gas Association, Natural Gas Dept., Cincinnati, Hotel Gibson.
7– 9	Petroleum Industry Electric Association, Annual Convention, Tulsa.
7– 9	National Association Corrosion Engineers, Kansas City, Missouri, President Hotel.
17–18	Southwestern District, Production Division, API, Spring Meeting, Shreveport, La., Washington-Youree Hotel.
23–25	National Oil Scouts and Landmen's Association, Annual Convention, Jackson, Mississippi, Hotel Heidelberg.
28–29	American Petroleum Institute, Directors' Meeting, Fort Worth, Blackstone Hotel.
JUNE 6– 7	Mid-Continent District, Production Division, API, Spring Meeting, Oklahoma City, Skirvin Hotel.
7– 8	Kentucky Oil & Gas Association, Lexington, Ky., Hotel Lafayette.
13–14	Eastern District, Production Division API, Spring Meeting, Pittsburgh, Pa., William Penn Hotel.
17	FPC Gas Hearing, Washington, D.C.
27–28	Pennsylvania Grade Crude Oil Association, Annual Meeting, Pittsburgh, William Penn Hotel.
OCT. 7–12	American Gas Association, Annual Convention, Atlantic City, N.J.
16–18	Texas Mid-Continent Oil and Gas Association, Houston, Rice Hotel.
NOV. 11–14	American Petroleum Institute, Annual Meeting, Chicago, Stevens Hotel.

MANUFACTURERS' NOTES

General Machine and Supply Moves Into New Building

General Machine and Supply Company, Wichita Falls, Texas, has moved into a new building at 702 West 2nd Street, Odessa, Texas, to enlarge and modernize services to West Texas operators. The Odessa branch was opened several years ago to bring Le Roi products and services to that area, and has grown with the development of the fields. The new plant, a two-story, all-brick structure, incorporates a large suite of offices, a greatly enlarged stock of engines and parts, and a service shop.

M. F. Hazel Becomes Assistant To Oilwell Supply Vice President

M. F. Hazel, recently released from the Navy with the rank of lieutenant and former assistant division manager at Houston, has been appointed assistant to the vice president of Oil Well Supply Company and will be located in Dallas. A native of Bellefonte, Pa., he joined "Oilwell" in 1930 after graduating from Pennsylvania State College as a mechanical engineer.

M. F. Hazel

C. A. Bell, Houston district manager, was appointed division representative; F. W. Little, assistant manager, tubular department, Pittsburgh, was named Southeast Texas district manager; R. G. Robinson, field salesman, was named Southeast Texas district engineer; T. P. Drummond, district engineer, was named division manager of refinery sales, and James F. Shoemaker was named district engineer, refinery sales.

B. A. August, former store manager at Alice, Texas, has been named manager of the newly-created South Louisiana-Mississippi sales and service district with headquarters in New Orleans. R. L. Humphrey, former business manager and vice president of Associated Publishers of Dallas and recently released after four years in the Army Air Corps, has been appointed Gulf Coast division tubular representative of Oil Well Supply Company. D. R. Smith has been appointed manager of the Ponca City, Okla., sales office to replace James A. Hill, who has become district manager of Oilwell's Colorado-Wyoming district. Louis A. Weingart, district engineer, has been promoted to manager of the refinery sales for the Mid-Continent division with offices in Ponca City. W. O. Johnson has been named manager of Oilwell's store at Ville Platte, La., and Minor S. Nicklas manager of the El Dorado, Ark., store. John H. Cooper, former machinery salesman and district engineer at Tulsa, has been appointed West Texas district engineer with offices at Odessa, Texas. Wayland C. Philley, after four years in the Army, has returned to become Oilwell's store manager in Wichita Falls, Texas.

Foster Wheeler Corporation Board Headed by H. S. Brown

Directors of Foster Wheeler Corporation have elected H. S. Brown as chairman of the board to succeed his brother, the late J. J. Brown. Brown will continue as president of the corporation in addition to his new post. David McCulloch, executive vice president, was named chairman of the executive committee to succeed H. S. Brown. All other officers were reelected.

W. A. Swann Joins Krausse as Development, Sales Manager

W. A. Swann, formerly senior petroleum engineer for Humble Oil & Refining Company, which he served 13 years, has joined Krausse Manufacturing Company as manager of development and sales.

W. A. Swann

His work will include the management of design, development and distribution of a new line of oil field equipment. Krausse enters into the manufacturing of oil field equipment with the addition of a modern plant on Clinton Drive, Houston. The plant occupies four of the 25-acre site and houses more than 20,000 square feet. Facilities are under construction for the inspection and testing of the company's products.

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